SVQ

Training and
Assessment Programme

WOOD MACHINING

Produce Profiled Timber and Timber-based Products

SBATC

SCOTTISH QUALIFICATIONS AUTHORITY

3. PRODUCE PROFILED TIMBER AND TIMBER-BASED PRODUCTS

INTRODUCTION

On successful completion of this Unit, the candidate will be able to use various woodworking machines and joinery hand tools. Woodworking machines to include: Spindle moulder, High speed router and Wood turning lathe. The candidate will be assessed on accuracy when preparing cutting list, costing and manufacture of the bedside cabinet and on various test throughout the Unit.

Teaching Guidelines

Candidates must draw all projects before attempting to manufacture.

Candidates must also make up a cutting list for the following project:

Bedside cabinet

All machines must be maintained according to the manufacturers' specifications before use.

All finished projects must be working towards industrial tolerances of:

±0.5mm for break out material

±1mm for overall size

All sizes are in millimetres unless otherwise stated.

Core Skills

Communication will be assessed as candidates work individually but in contact with a member of staff, or communicate with other candidates. **Numeracy** will be assessed throughout the Unit. Drawing will be assessed as part of the formative assessment material. **Problem solving** will be assessed, as candidates will be required to overcome machining and assembling difficulties.

Generic Units

There will be opportunities during this Unit to assess certain elements of the generic Units as candidates will have to communicate with others and contribute to efficient working practices, together with setting up and maintaining the working area which in general develops the ability to work in a professional manner.

Underpinning knowledge

The knowledge and understanding required for this Unit should be taught in tandem with the practical work of this Unit. It follows therefore that the assessment of performance evidence and knowledge evidence should be done around the same time. This knowledge and understanding will be assessed with the objective test questions provided, and those assessments will be conducted in a 'closed book' format.

Element 1. Prepare, set up and establish suitability of machinery and materials

Report Sheet 1

Candidate's name _____

Class _____

Date _____

Discrepancies in information

It has been noted that the above discrepancies have been found.

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Risk assessment and method statement to be completed by candidate.

Name: _____ Class: _____ Date: _____

Risk assessment

Method statement

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Candidates must draw all projects before attempting to manufacture.

The candidate must also make up a cutting list and cost the following project:

Bedside cabinet

All machines must be maintained according to the manufacturer's specifications before use.

All finished projects must be working towards industrial tolerances of:

±0.5mm for break out material

±1mm for overall size

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 1

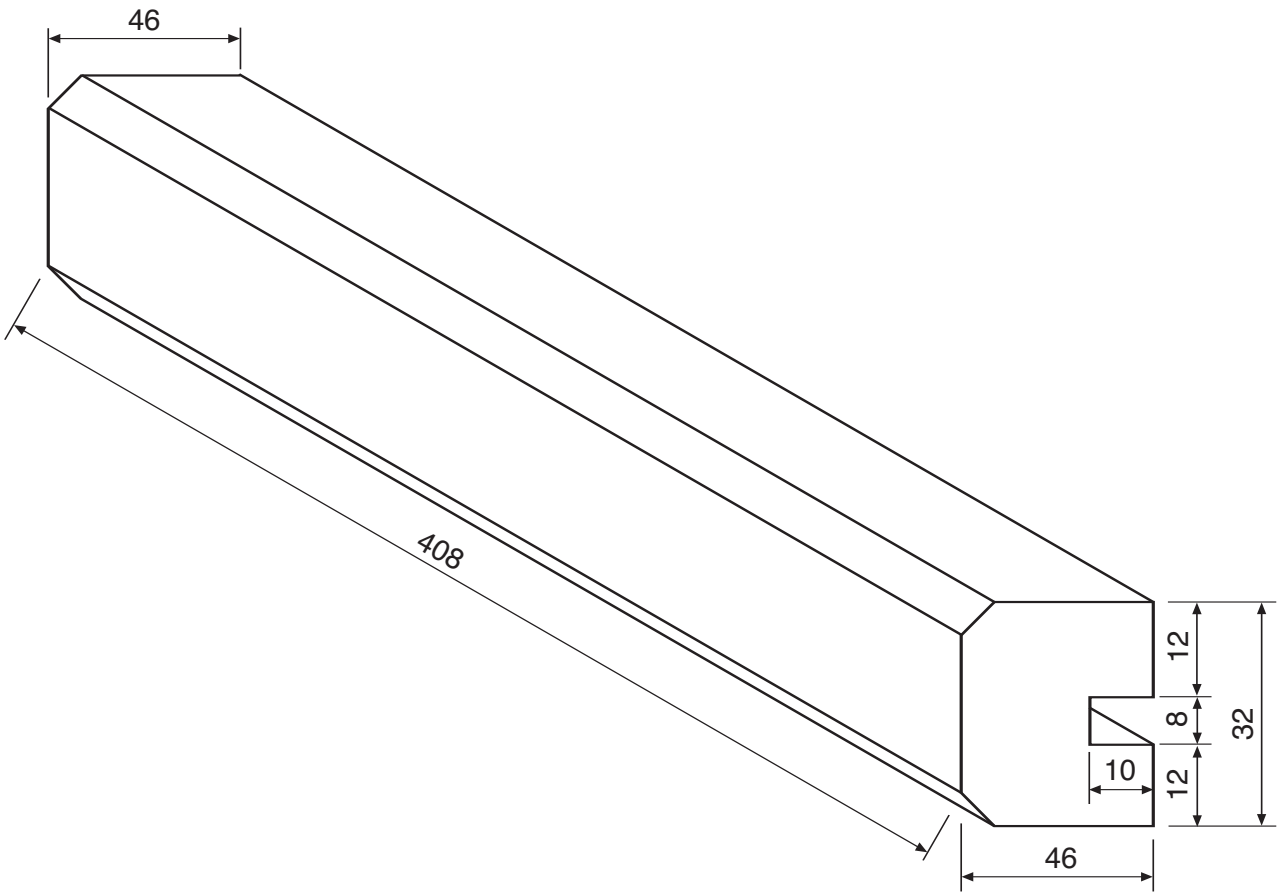
Spindle moulder components

Break out two pieces of redwood 50 x 37.

Face and edge this material and dress to a finished size of 46 x 32.

Set up and use the spindle moulder to do a 8 x 8 bevel and a 10 x 8 groove using the appropriate cutter block for each task.

Finally trim the timber to the given length on the dimension saw.



Task 1 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 2

Spindle moulder components

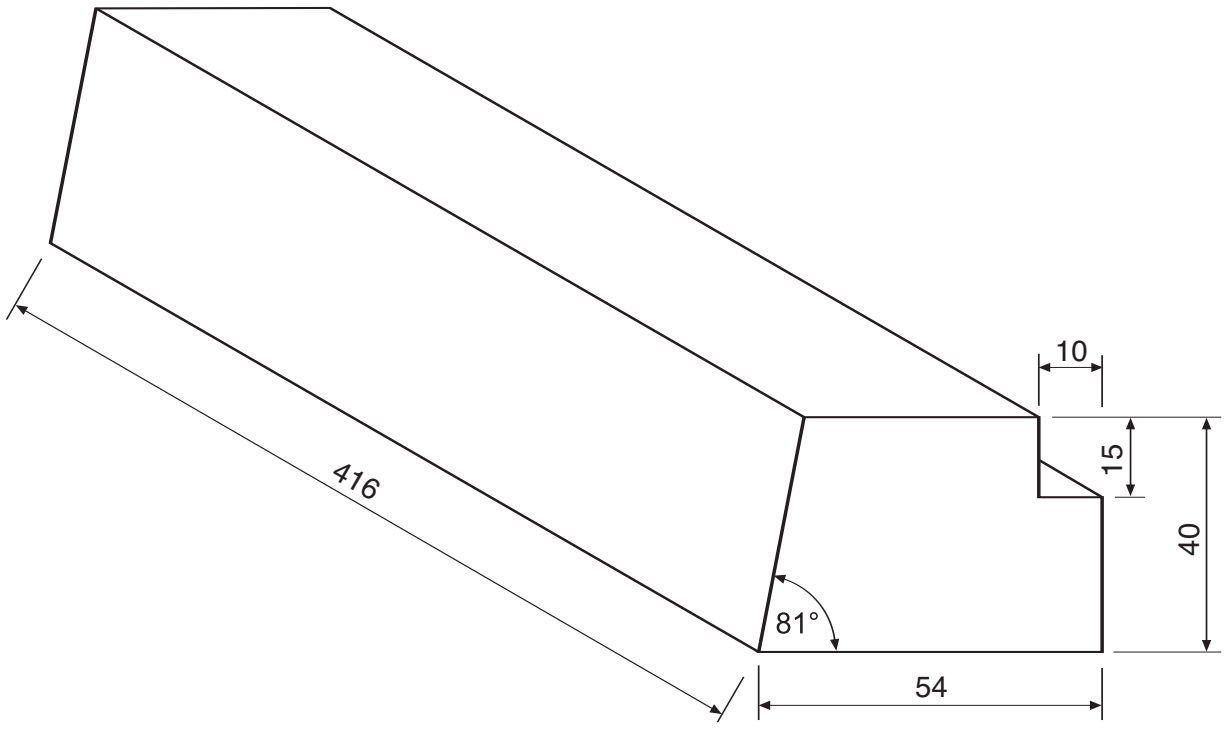
Break out two pieces of redwood 60 x 45.

Face and Edge the material and dress to 54 x 40.

Set up and use the spindle moulder to do a 15 x 10 rebate and the bevel shown.

Using the appropriate cutter blocks for each task.

Finally trim the timber to the given length on the dimension saw.



Task 2 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 3

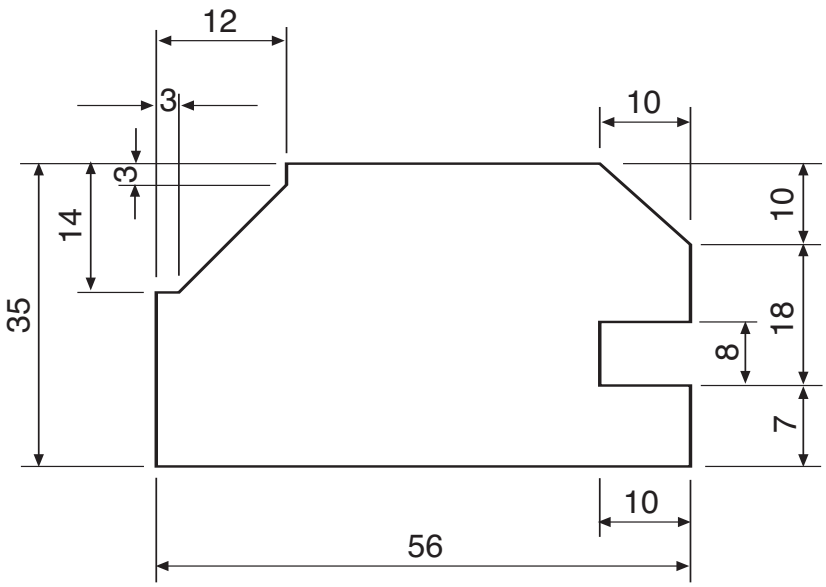
Spindle moulder components

Break out two pieces of redwood 62 x 40 x 600 in length.

Face and edge this material and thickness to 56 x 35.

Set up the spindle moulder to machine the moulding, chamfer and groove using the appropriate cutter blocks for each task.

Finally trim the timber to 520mm in length on the dimension saw.



Task 3 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Test 1

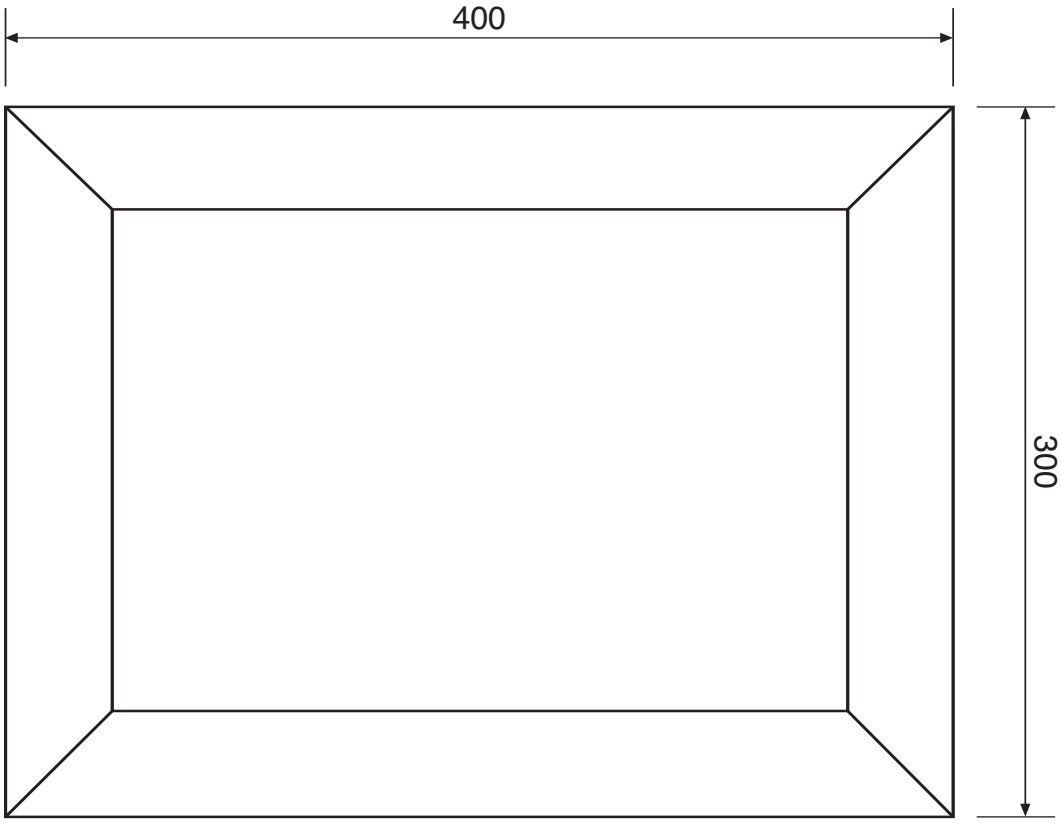
Picture frame

Break out two pieces of redwood 45 x 30.

Face and edge this material and thickness to 40 x 25.

Set up and use the spindle moulder and then dimension saw to produce a picture frame using the appropriate cutter blocks for the task.

Your lecturer will decide on the shape of the moulding.



Test 1 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

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Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

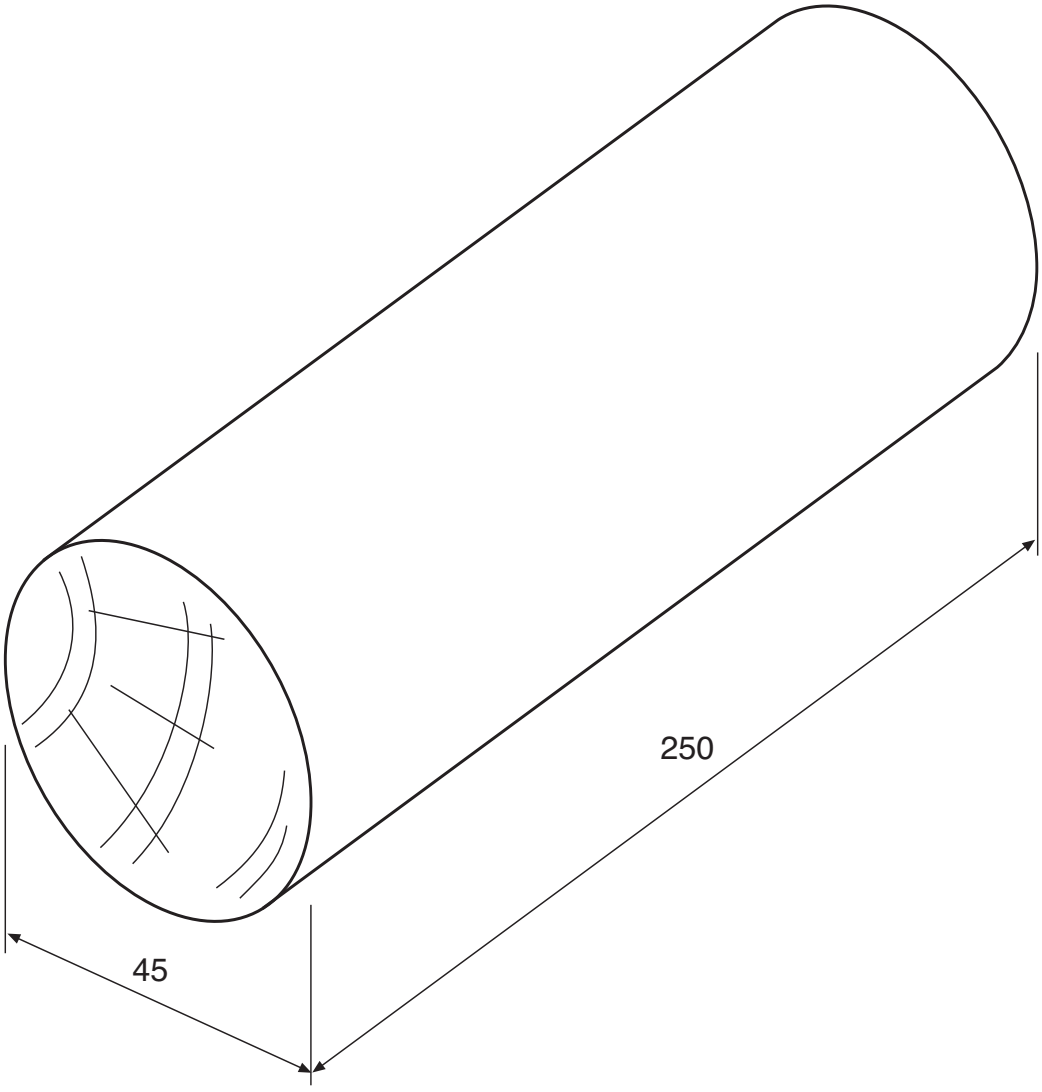
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 4

Wood turning lathe

Given:	Red Pine 250 x 50 x 50
Task:	Turn cylinder to 45mm diameter.
Machine used:	Wood turning lathe.
Instructions:	Mark centres and mount workpiece on lathe.
	Choose the set speed.
	Use gouge to turn timber to 46mm diameter checking all callipers.
	Use skew chisel to finish timber to 45mm diameter.
Tolerance:	±2mm.



Task 4 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

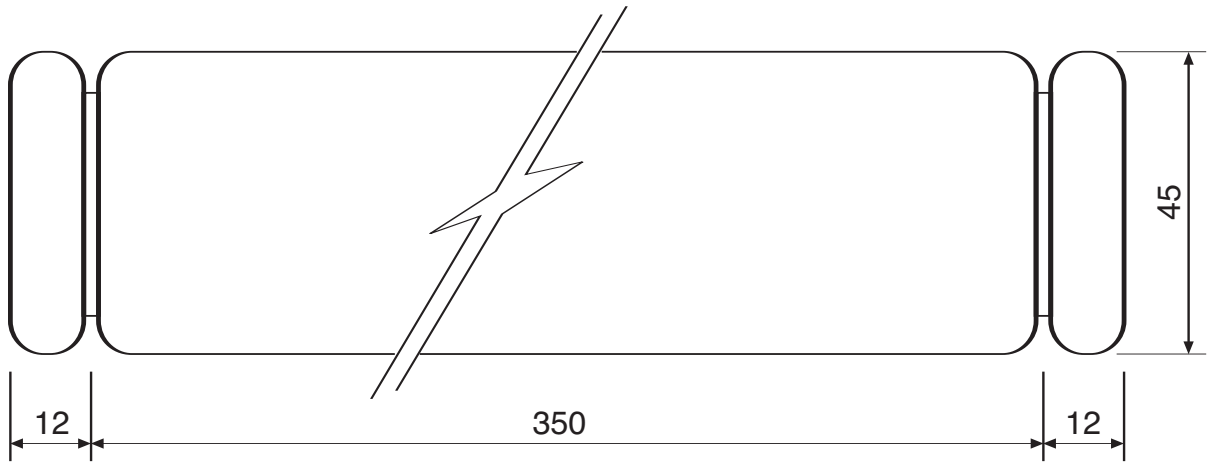
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 5

Wood turning lathe

Given:	Hardwood 50 x 50 x 400
Task:	Use wood turning lathe to make rolling pin as diagram.
Machine used:	Wood turning lathe.
Instructions:	Mark centres and mount workpiece on lathe.
	Select and set speed.
	Use appropriate turning chisels to manufacture.
	Finish with abrasive paper.
	Trim to length.
Tolerance:	±2mm



Task 5 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

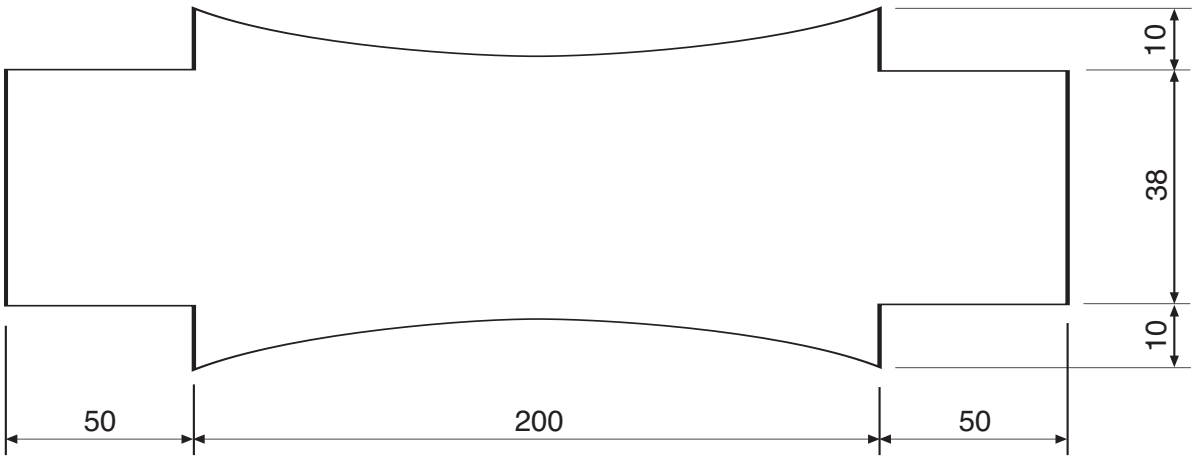
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 6

Wood turning lathe

Given:	Red Pine 300 x 63 x 63.
Task:	Machine timber to drawing.
Machine used:	Wood turning lathe.
Instructions:	Mark centres and mount workpiece on lathe. Choose and set speed. Use gouge to turn timber to 58mm diameter checking with callipers. Mark shoulders and use skew to form them. Use gouge to form curve (40mm diameter at centre) and sandpaper finish.
Tolerance:	Candidate to have three attempts if necessary ±2mm.



Task 6 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

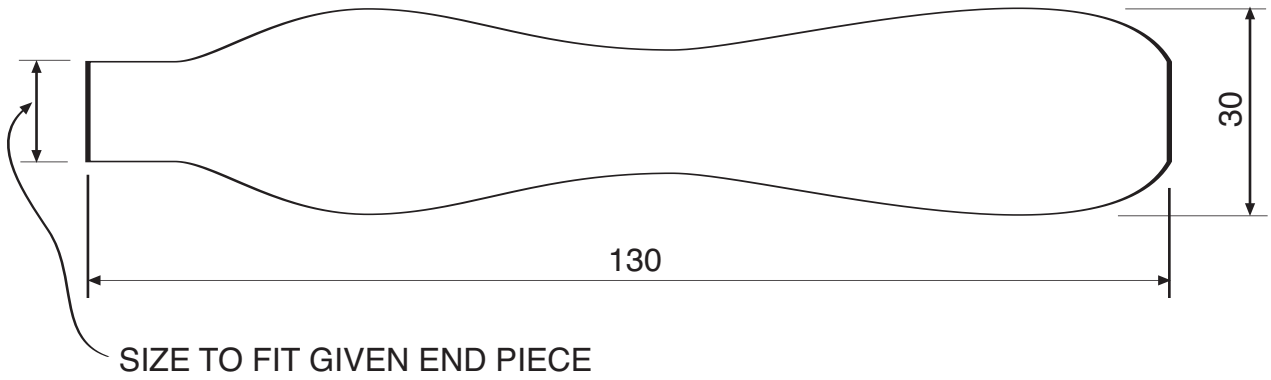
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Test 2

Wood turning lathe

Given:	Hardwood 150 x 38 x 38.
Task:	Machine timber to drawing.
Machine used:	Woodturning lathe.
Instructions:	Mark centres and mount workpiece on lathe.
	Choose and set speed.
	Select appropriate chisels and form file handle as shown.
	The ferrule should be a fit for available tubing.
	Finish with abrasive paper.
Tolerance:	±2mm.



Test 2 — Continued

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Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

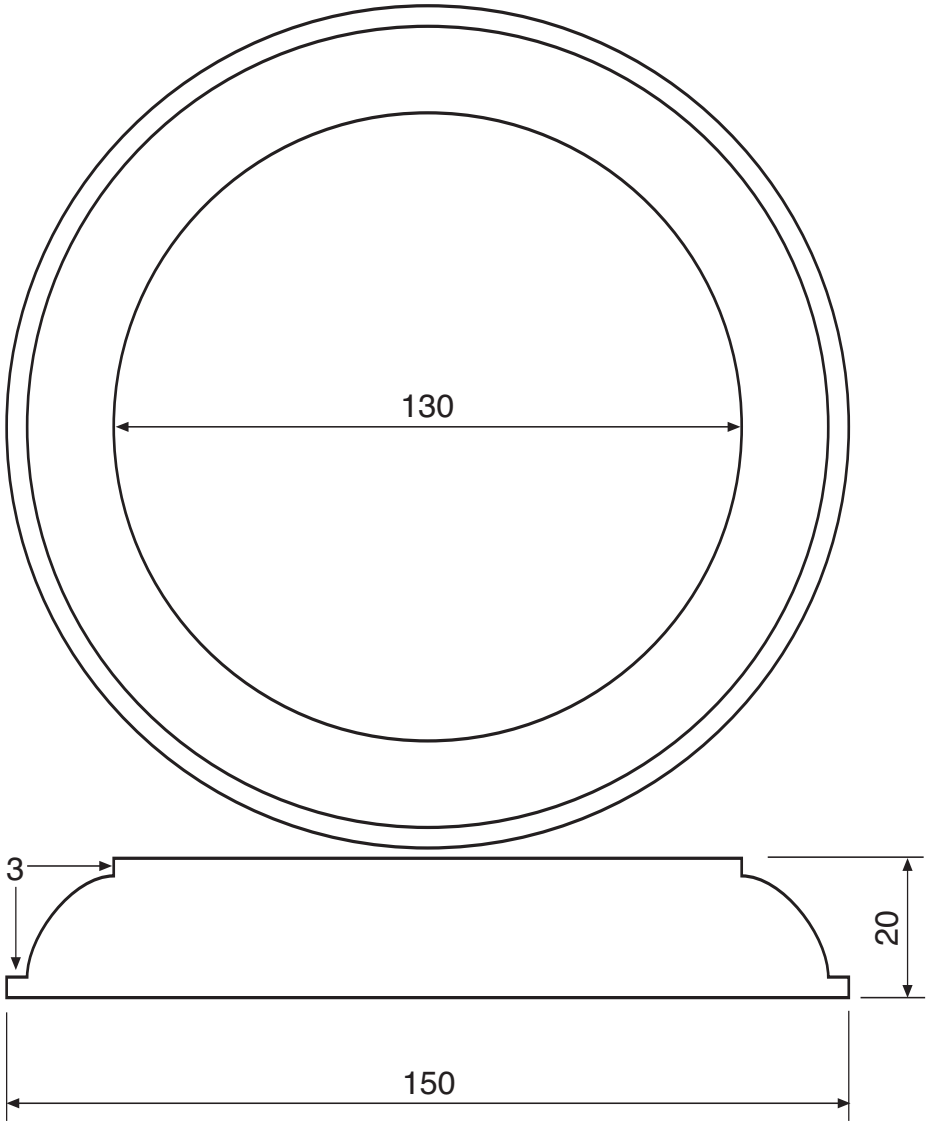
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 7

Wood turning lathe

Given:	Hardwood or softwood 160 x 160 x 20R.
Task:	Machine base to drawing.
Machine used:	Wood turning lathe.
Instructions:	Fix timber to base plate.
	Mount on lathe and select suitable speed.
	Proceed to turn work piece as drawing.
	Finish with abrasive paper.
Tolerance:	±2mm.



Task 7 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

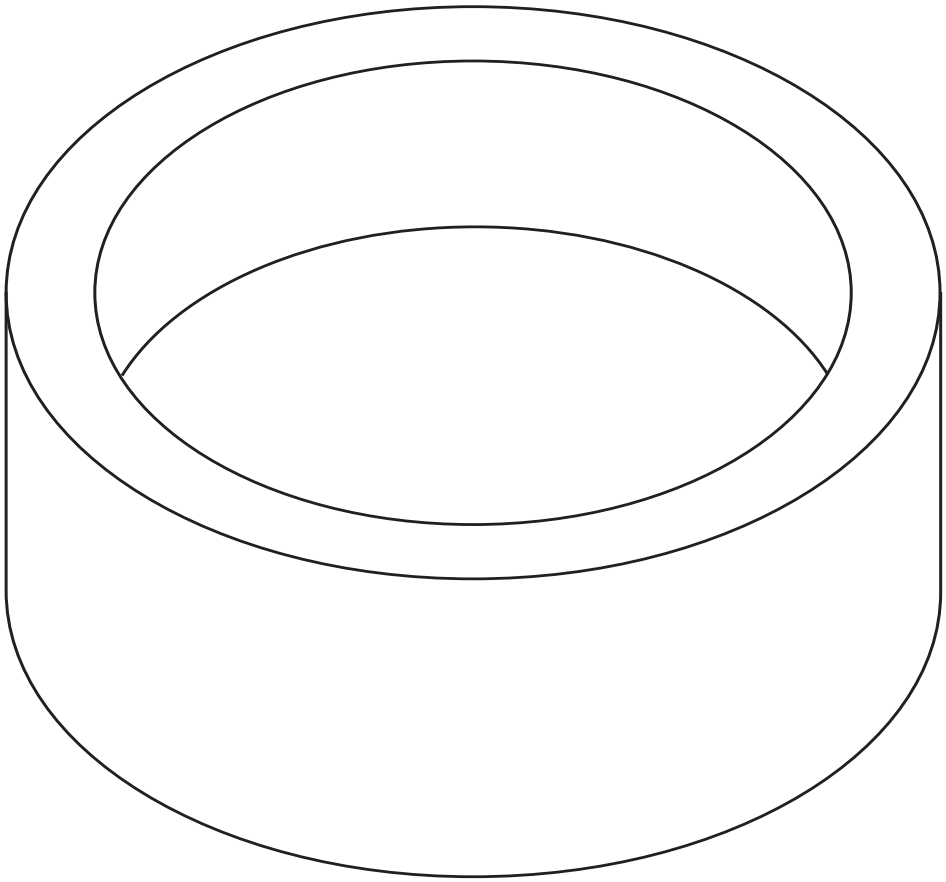
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Task 8

Wood turning lathe

Given:	Hardwood as available. 50mm thick suitable for faceplate.
Task:	Turn dish as drawing using faceplate or bell chuck.
Machine used:	Wood turning lathe.
Instructions:	Centre and screw work piece to face plate.
	Select suitable speed and use scraper to turn dish.
	Finish with abrasive paper.
	Difference between outside and inside diameter should be 12mm. Thickness left on at base = 15mm



Task 8 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

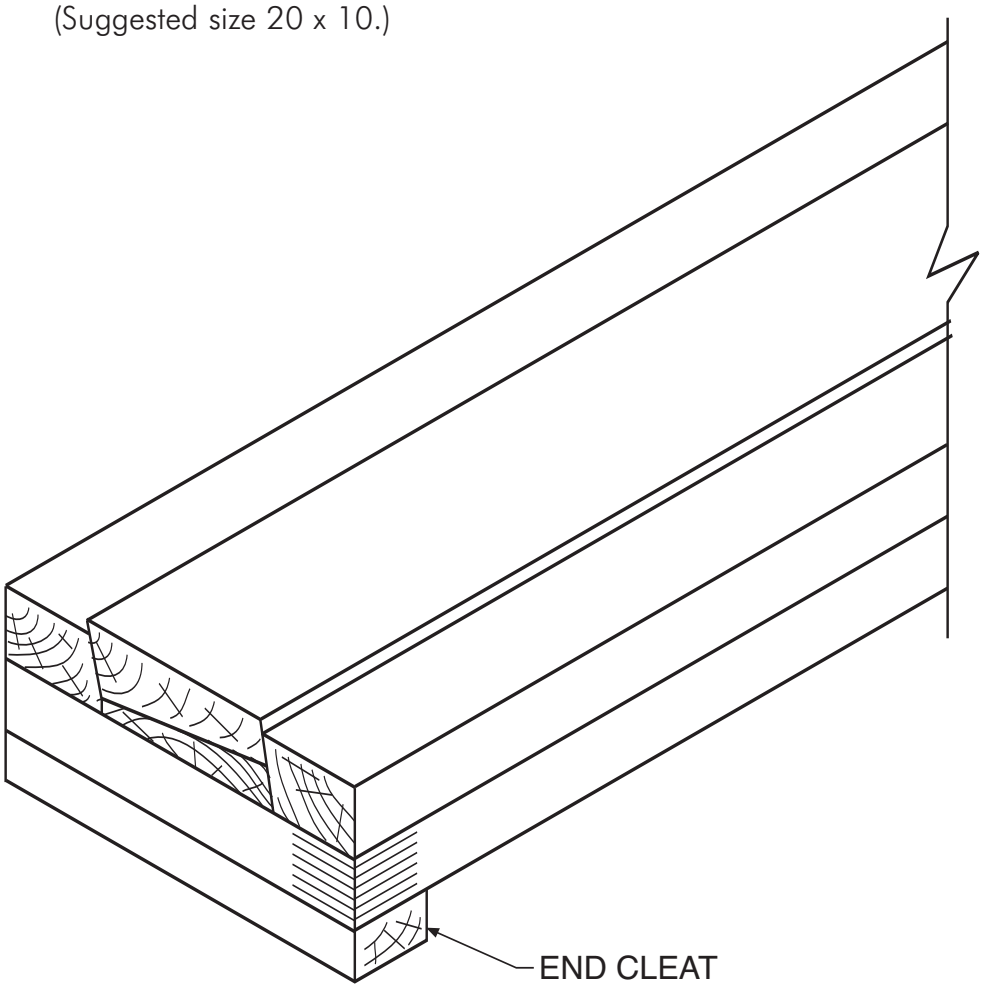
Internal verifier's signature: _____ Date: _____

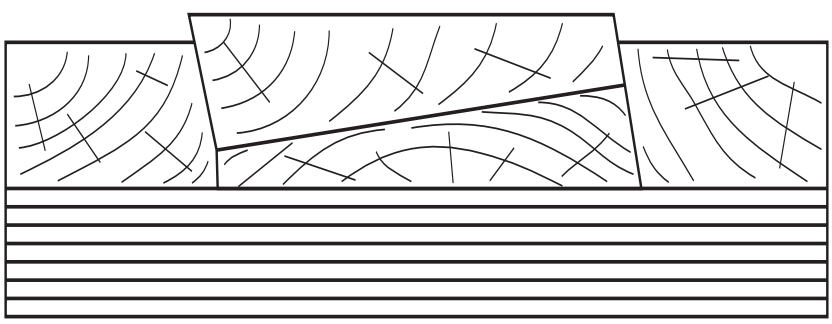
Element 2. Modify materials to form profiled timber and timber-based products

Test 3

Jig construction

Task: Design and manufacture a jig suitable to run glazing beads to be fitted to the door in Unit **Produce Jointed Timber and Timber-based Products.** (Suggested size 20 x 10.)





Test 3 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

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Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

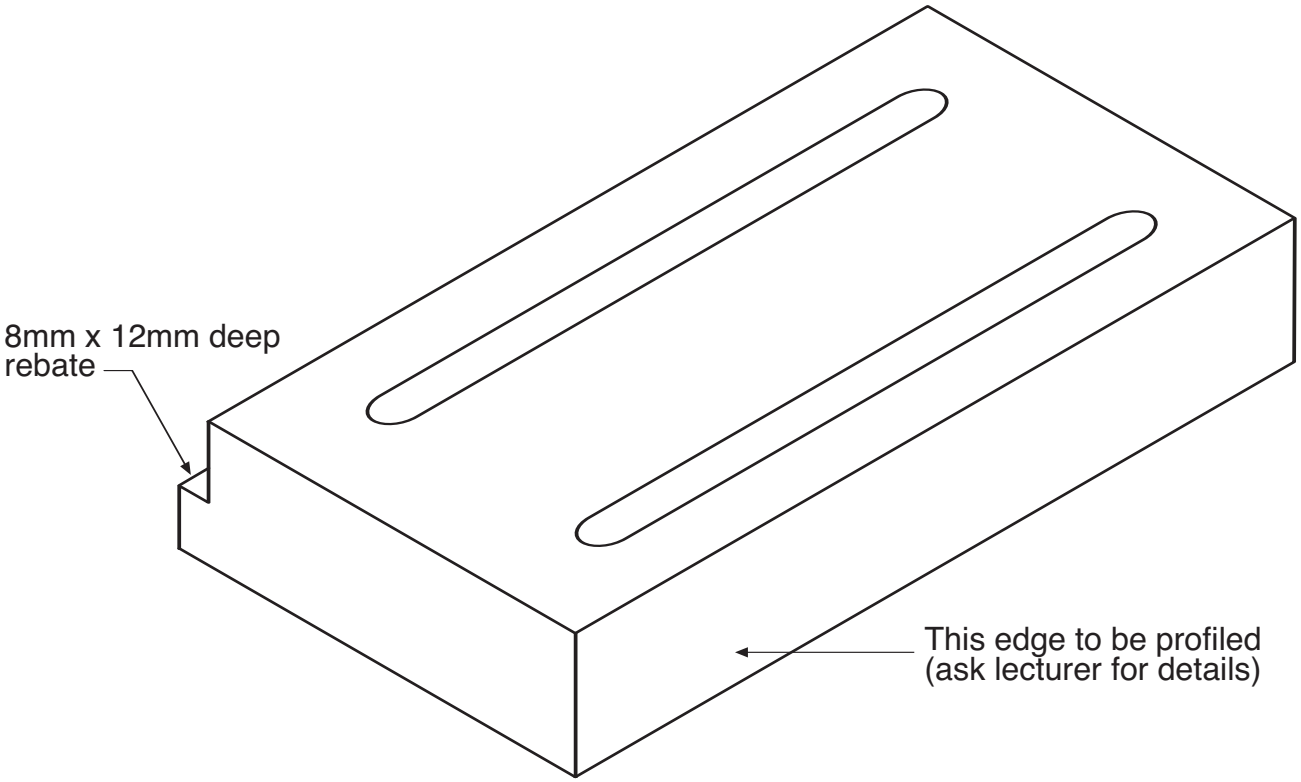
Task 9

High speed router

Task: Prepare a piece of timber to 450 x 120 x 22mm.

Set up and produce a 12mm stopped slot 5mm deep, 25mm from the opposite edge and 25mm from either end.

Along the edge with the stopped slot machine a 8mm wide x 12mm deep rebate.



Task 9 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Test 4

Bedside cabinet (High speed router and spindle moulder)

Task: Dimension the drawing using appropriate sizes. (Consult with your lecturer.)

Make a cutting list.

Break out and dress the material (Red pine)

Mark out and groove for a slip feather (stopped on gables) using your own jig. (Consult your lecturer.)

Glue and cramp material.

Cut to finished sizes.

Machine the housings on gables at high speed router using your own jig. (Consult your lecturer.)

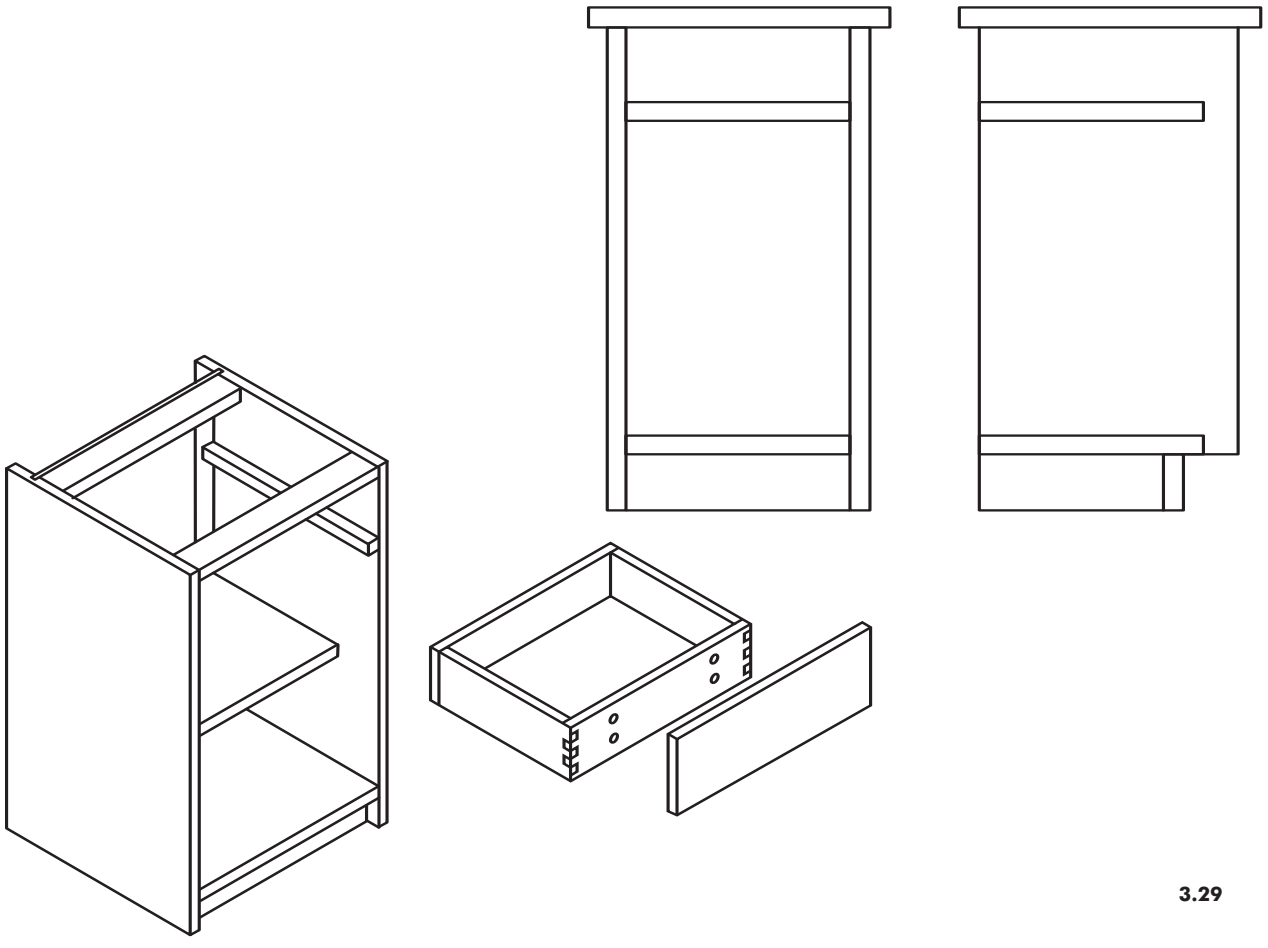
Rebate bottom and gables for back.

Cut toe-space on gables at narrow bandsaw.

Spindle mould a pencil round on the front edges.

Glue and assemble.

(Drawer to be manufactured at later date.)



Test 4 — Continued

Cutting list to be completed by candidate.

Name: _____ Class: _____ Date: _____

Cutting list — Test 4

Component	No.	Sawn Length	Sawn Width	Sawn Thickness	Finished Width	Finished Thickness	Comments/ Remarks

PASS/REFERRED

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Test 4 — Continued

Bedside cabinet (Costing of timber)

Length	=	Lineal metres linm
Length x breadth	=	Square metres m^2
Length x breadth x thickness	=	Cubic metres m^3

Timber sold as:
- 100 linm (softwood)
- m^2 (board material, some softwood and hardwood)

Quantity	Description	Length	Breadth	Thickness	Cost Lin. m^2/m^3	Unit cost
					Total	
					VAT	
					Final cost	

Test 4 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

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Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

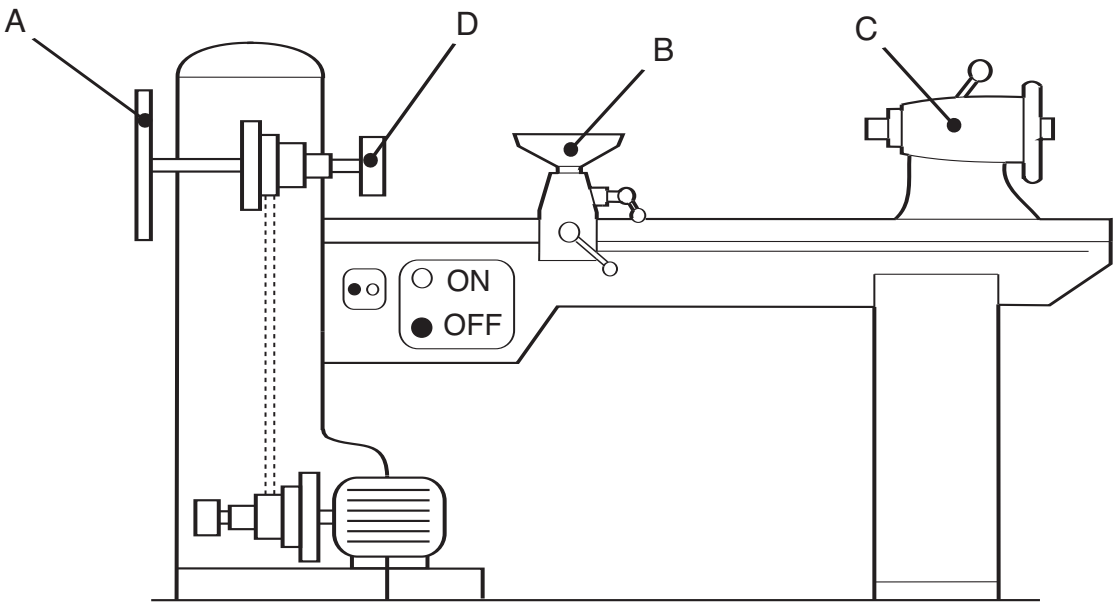
Task 12

Name the machine, machine parts and machine function

Worksheet 1

Q1a. The machine below is known as a

_____



Q1b. The function of the machine is

_____

_____

Q1c. Against the following letters place the correct name for the part shown in the diagram.

A. _____ C. _____

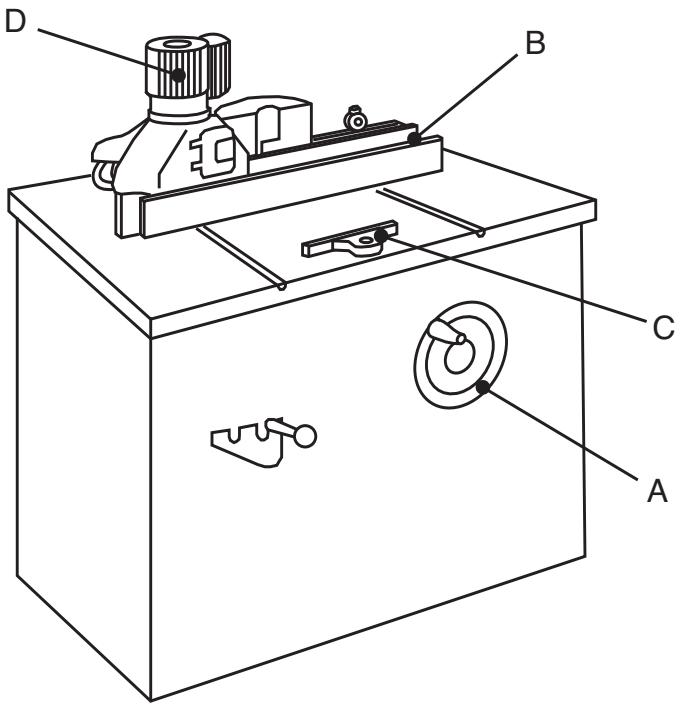
B. _____ D. _____

Task 12 — Continued

Worksheet 2

Q2a. The machine below is known as a

_____



Q2b. The function of the machine is

_____

_____

Q2c. Against the following letters place the correct name for the part shown in the diagram.

A. _____ C. _____

B. _____ D. _____

KNOWLEDGE EVIDENCE

Paper A

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. What action would you take if the servicing schedule for a woodworking machine went missing?

A Report it to your supervisor

B Ignore it, it does not matter

C Tell your mate

D Make up a new one from memory

Q2. According to the PUWER 98 guidelines what cutter block should be used on a spindle moulder when profiling timber?

A Whitehall head

B Slotted collar

C Chip limiter block

D Flush mounted head

Q3. Sketch a cross section of two boards and add the end grain to show each of the following:

A Tangential cut

B Radial cut

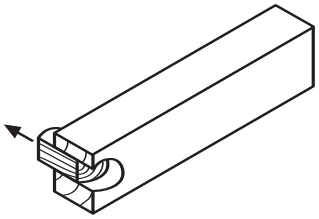
Q4. Look at this diagram. What type of knot is illustrated?

A An arris knot

B A dead knot

C An end snake

D A case hardening



KNOWLEDGE EVIDENCE

Paper A — Continued

Q5. What is the main reason for selecting defect free timber to produce complicated fragile mouldings?

A. It is lighter to handle
B It feeds through the machine quicker
C It gives better-finished surfaces
D It looks better

Q6. When turning a cylinder on a woodturning handle, what chisel would you start with?

A Square nose chisel
B Round nose chisel
C Gouge chisel
D Diamond-point chisel

Q7. If 50 x 200m Redwood off-saw costs £581.80 per 100m, what would 73m cost? (All workings to be shown.)

A £4.25
B £4,248.60
C £42.49
D £424.86

Q8. 45 x 45mm square edged Whitewood Dressed is required for framing. The amount of material, 560m, is priced at £210.05 per 100m. What is the total cost of the framing? (All workings to be shown.)

A £11,765.6
B £117,656
C £117.66
D £1,176.56

Paper A — Continued

Q9. Calculate the volume of a dust extraction silo measuring 6000mm x 3500mm x 3500mm. (All workings to be shown.)

A 73.5 m^3

B 735.0 m^3

C 0.735 m^3

D 7350.0 m^3

Q10. What does the viscosity of oil mean?

A Colour

B Amount

C Cost

D Thickness

Q11. Regulations state that the floor space around a woodworking machine must be:

A unobstructed

B polished

C abrasive

D resilient

Q12. What could happen if the manufacturer's servicing schedules were ignored?

A. Nothing, machines last forever

B. Possible breakdown

C. You will not get paid

D. It will damage the cutters

KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Element 1 — Workings

Paper A

Element 2. Modify materials to form profiled timber and timber-based products

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. When moulding MDF skirting on a spindle moulder what is the best type of cutter to use?

A High-speed steel

B T.C.T. tungsten carbide tipped

C Mild steel

D Carbon tool steel

Q2. What effect does machining MDF with H.S.S. cutters have?

A None

B Gives great finish

C Dulls them very quickly

D Damages the MDF

Q3. What machine would be used to manufacture a rolling pin?

A Pillar drill

B Spindle moulder

C Wood turning lathe

D High speed router

Q4. What is a good way of securing work pieces to jigs?

A G clamps

B Toggle clamps

C Glue

D All of the above

KNOWLEDGE EVIDENCE

Paper A — Continued

Q5. When operating a high speed router, when would H.S.S. cutters be used?

A Using MDF

B Using chipboard

C Using redwood

D Using hardwood

Q6. Which of the cutter heads below would be most suitable for creating a groove 22mm x 8mm?

A Profile cutter

B Adjustable saw

C Adjustable re-bate block

D Adjustable bevel block

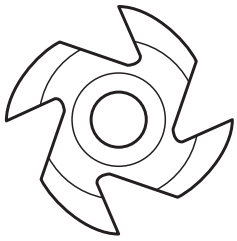
Q7. Identify the block shown here.

A Circular block

B Whitehall cutter block

C Rebate block

D Solid profile block



Q8. A tabletop has been cut from Redwood and is ready to glue using 'slip feathers'. What is the most suitable machine for cutting stop grooves?

A Mortise machine

B Spindle moulder

C Rip saw

D High speed router

Q9. When using a jig on a high speed router what is your main priority?

A Speed

B Safety

C Finish

D Quality

Paper A — Continued

Q10. All jigs must be strong and fitted with:

A. hand holds

B. dowels

C. screws

D. G clamps

Q11. When operating the high speed router with a fence the material must be fed:

A. against the cutter rotation

B. with the cutter rotation

C. very fast

D. none of the above

Q12. When using the spindle moulder the cutter block speed is governed by:

A. what the machine is set at

B. your foreman

C. manufacturer's maximum balance speed

D. whether or not you are using automatic feed

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Paper A

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. **Why should gloves be worn when handling diesel oil?**

A So that your hands will be clean

B To prevent you getting a skin disease

C As a fire precaution

D To prevent you from breathing in the fumes

Q2. **How would you recognise a hazardous substance?**

A By reading the symbol on the container

B By smelling the substance

C By the colour of the lid

D By asking the supervisor

Q3. **What should you do if you notice a power tool you are using has burn marks on the cable?**

A Do nothing and carry on with the job as the power tool is not your responsibility

B Tape over the cable as it is your responsibility to repair tools you use

C Tell your supervisor about the defect and do not use the tool any more

D Put the tool back in the store and get another one to complete the job

Q4. **What do the letters PPE stand for?**

A Power Point Entry

B Peoples Protective Equipment

C Personal Protection Establishment

D Personal Protective Equipment

KNOWLEDGE EVIDENCE

Paper A — Continued

Q5. **If your PPE is defective what should you do?**

A You would have to buy a new one for the next day

B Repair it and then continue to use it

C You should report it to your supervisor

D Carry on using it in the meantime

Q6. **Your supervisor tells you to lift something which you find to be too heavy. You should:**

A Tell him to lift it himself

B Inform the supervisor that it is too heavy

C Go and look for a forklift

D Leave it for someone else to lift

Q7. **What is the maximum weight that a person is allowed to lift?**

A As much weight as the person can possibly manage

B There is no maximum weight recommended

C As much as the person can lift comfortably

D 50kg is the maximum allowed

Q8. **What is a fire assembly point?**

A The place where people must go if the fire alarm sounds

B The place where the fire extinguishers are kept

C The place where the fire alarm is kept until needed

D The place where a fire is most likely to start

KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 6 correct out of 8.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

Paper A — Model Answers

Element 1

1	A
2	C
3	–
4	B
5	C
6	C
7	D
8	D
9	A
10	D
11	A
12	B

Element 2

1	B
2	C
3	C
4	B
5	C
6	B
7	D
8	B
9	B
10	A
11	A
12	C

Element 3

1	B
2	A
3	C
4	D
5	C
6	B
7	C
8	A

Paper B

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. If 50 x 200m Redwood off-saw costs £581.80 per 100m, what would 73m cost? (All workings to be shown.)

A £424.86

B £4,248.60

C £42.49

D £4.25

Q2. 45 x 45mm square edged Whitewood Dressed is required for framing. The amount of material, 560m, is priced at £210.05 per 100m. What is the total cost of the framing? (All workings to be shown.)

A £117.66

B £117.656

C £1,176.56

D £11,765.6

Q3. When turning a cylinder on a woodturning handle, what chisel would you start with?

A Square nose chisel

B Round nose chisel

C Diamond-point chisel

D Gouge chisel

Q4. What action would you take if the servicing schedule for a woodworking machine went missing?

A Ignore it, it does not matter

B Report it to your supervisor

C Tell your mate

D Make up a new one from memory

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. **Regulations state that the floor space around a woodworking machine must be:**

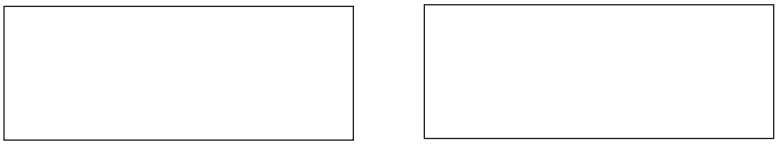
A. abrasive
B. polished
C. unobstructed
D. resilient

Q6. **According to the PUWER 98 guidelines, what cutterblock should be used on a spindle moulder when profiling timber?**

A. Chip limiter block
B. Whitehall head
C. Slotted collar
D. Flush mounted head

Q7. **Sketch a cross section of two boards and add the end grain to show each of the following:**

A tangential cut
B radial cut



Q8. **What could happen if the manufacturer's servicing schedules were ignored?**

A. It will damage the cutters
B. You will not get paid
C. Nothing, machines last forever
D. Possible breakdown

Paper B — Continued

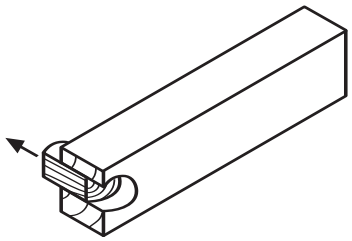
Q9. Look at this sketch. What type of knot is illustrated?

A An arris knot

B A dead knot

C A case hardening

D An end snake



Q10. What is the main reason for selecting defect free timber to produce complicated fragile mouldings?

A It feeds through the machine quicker

B It is lighter to handle

C It gives better-finished surfaces

D It looks better

Q11. Calculate the volume of a dust extraction silo measuring 6000mm x 3500mm x 3500mm. (All workings to be shown.)

A 735.0 m^3

B. 73.5 m^3

C 0.735 m^3

D 7350.0 m^3

Q12. What does the viscosity of oil mean?

A. Thickness

B. Amount

C. Cost

D. Colour

KNOWLEDGE EVIDENCE

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ **Date:** _____

PASS/REFERRED

Lecturer's signature / initials: _____ **Date:** _____

KNOWLEDGE EVIDENCE

Element 1 — Workings

Paper B

Element 2. Modify materials to form profiled timber and timber-based products

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. When using the spindle moulder the cutterblock speed is governed by:

A the manufacturer's maximum balance speed

B your foreman

C what the machine is set at

D whether or not you are using automatic feed

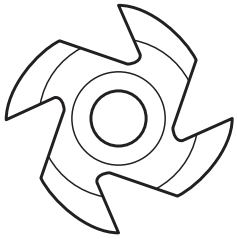
Q2. Identify the block shown in the sketch below.

A Whitehall cutterblock

B Circular block

C Solid profile block

D Rebate block



Q3. A tabletop has been cut from Redwood and is ready to glue using 'slip feathers'. What is the most suitable machine for cutting stop grooves?

A Mortise machine

B High speed router

C Rip saw

D Spindle moulder

Q4. When moulding MDF skirting on a spindle moulder, what is the best type of cutter to use?

A High-speed steel

B Mild steel

C T.C.T. tungsten carbide tipped

D Carbon tool steel

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. When using a jig on a high-speed router, what is your main priority?

A Safety
B Speed
C Finish
D Quality

Q6. What effect does machining MDF with H.S.S. cutters have?

A None
B Dulls them very quickly
C Damages the MDF
D Gives great finish

Q7. All jigs must be strong and fitted with:

A G clamps
B dowels
C screws
D hand holds

Q8. What machine would be used to manufacture a rolling pin?

A Pillar drill
B Wood turning lathe
C Spindle moulder
D High-speed router

Q9. When operating the high-speed router with a fence, the material must be fed:

A very fast
B with the cutter rotation
C against the cutter rotation
D with none of the above

Paper B — Continued

Q10. What is a good way of securing work pieces to jigs?

A Toggle clamps

B G clamps

C Glue

D All of the above

Q11. Which of the cutter heads below would be most suitable for creating a groove 22mm x 8mm?

A Adjustable bevel block

B Profile cutter

C Adjustable re-bate block

D Adjustable saw

Q12. When operating a high-speed router, when would H.S.S. cutters be used?

A Using Redwood

B Using chipboard

C Using MDF

D Using hardwood

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 2. Modify materials to form profiled timber and timber-based products

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

Paper B

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 6 correct out of 8.

Q1. What is a fire assembly point?

A The place where a fire is most likely to start

B The place where the fire extinguishers are kept

C The place where the fire alarm is kept until needed

D The place where people must go if the fire alarm sounds

Q2. What do the letters PPE stand for?

A Power Point Entry

B Personal Protective Equipment

C Peoples Protective Equipment

D Personal Protection Establishment

Q3. Your supervisor tells you to lift something which you find to be too heavy. You should:

A Inform the supervisor that it is too heavy

B Go and look for a forklift

C Tell him to lift it himself

D Leave it for someone else to lift

Q4. What should you do if you notice a power tool you are using has burn marks on the cable?

A Do nothing and carry on with the job as the power tool is not your responsibility

B Tape over the cable as it is your responsibility to repair tools you use

C Put the tool back in the store and get another one to complete the job

D Tell your supervisor about the defect and do not use the tool any more

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. What is the maximum weight that a person is allowed to lift?

A There is no maximum weight recommended

B As much as the person can lift comfortably

C As much weight as the person can possibly manage

D 50kg is the maximum allowed

Q6. Why should gloves be worn when handling diesel oil?

A To prevent you getting a skin disease

B As a fire precaution

C To prevent you from breathing in the fumes

D So that your hands will be clean

Q7. How would you recognise a hazardous substance?

A By the colour of the lid

B By smelling the substance

C By reading the symbol on the container

D By asking the supervisor

Q8. If your PPE is defective what should you do?

A You would have to buy a new one for the next day

B You should report it to your supervisor

C Carry on using it in the meantime

D Repair it and then continue to use it

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 6 correct out of 8.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

Paper B — Model Answers

Element 1

1	A
2	C
3	D
4	B
5	C
6	A
7	–
8	D
9	B
10	C
11	B
12	A

Element 2

1	A
2	C
3	D
4	C
5	A
6	B
7	D
8	B
9	C
10	A
11	D
12	A

Element 3

1	D
2	B
3	A
4	D
5	B
6	A
7	C
8	B

SVQ

Training and
Assessment Programme

WOOD MACHINING

Produce Jointed Timber and Timber-based Products

SBATC

SCOTTISH QUALIFICATIONS AUTHORITY

4. PRODUCE JOINTED TIMBER AND TIMBER-BASED PRODUCTS

INTRODUCTION

On successful completion of this Unit, the candidate will be able to use various woodworking machines and joinery hand tools. Woodworking machines to include: Mortise machine and Tenon machine. The candidate will be assessed on accuracy when preparing cutting list, costing and manufacture of the small stool, semi-glazed door and tape rack.

Teaching Guidelines

Candidates must draw all projects before attempting to manufacture.

Candidates must also make up a cutting list for the following project:

Small stool

Semi-glazed door

A rod to be made up for door.

All machines and hand tools used must be maintained according to the manufacturer's specifications before and after use.

All finished projects must be working towards industrial tolerances of:

±0.5mm for break out material

±1mm for overall size

All sizes are in millimetres unless otherwise stated.

Core Skills

Communication will be assessed as candidates work individually but in contact with a member of staff, or communicate with other candidates. **Numeracy** will be assessed throughout the Unit. Drawing will be assessed as part of the formative assessment material. **Problem solving** will be assessed, as candidates will be required to overcome machining and assembling difficulties.

Generic Units

There will be opportunities during this Unit to assess certain elements of the generic Units as candidates will have to communicate with others and contribute to efficient working practices, together with setting up and maintaining the working area which in general develops the ability to work in a professional manner.

Underpinning knowledge

The knowledge and understanding required for this Unit should be taught in tandem with the practical work of this Unit. It follows therefore that the assessment of performance evidence and knowledge evidence should be done around the same time. This knowledge and understanding will be assessed with the objective test questions provided, and those assessments will be conducted in a 'closed book' format.

Element 1. Prepare, set up and establish suitability of machinery and materials

Report Sheet 1

Candidate's name _____

Class _____

Date _____

Discrepancies in information

It has been noted that the above discrepancies have been found.

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Risk assessment and method statement to be completed by candidate.

Name: _____ Class: _____ Date: _____

Risk assessment

Method statement

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Candidates must draw all projects before attempting to manufacture.

The candidate must also make up a cutting list and cost the following projects:

Small stool

Semi-glazed door

A rod to be made up for door.

All machines and hand tools used must be maintained according to the manufacturer's specifications before and after use.

All finished projects must be working towards industrial tolerances of:

±0.5 mm for break out material.

±1mm for overall size.

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

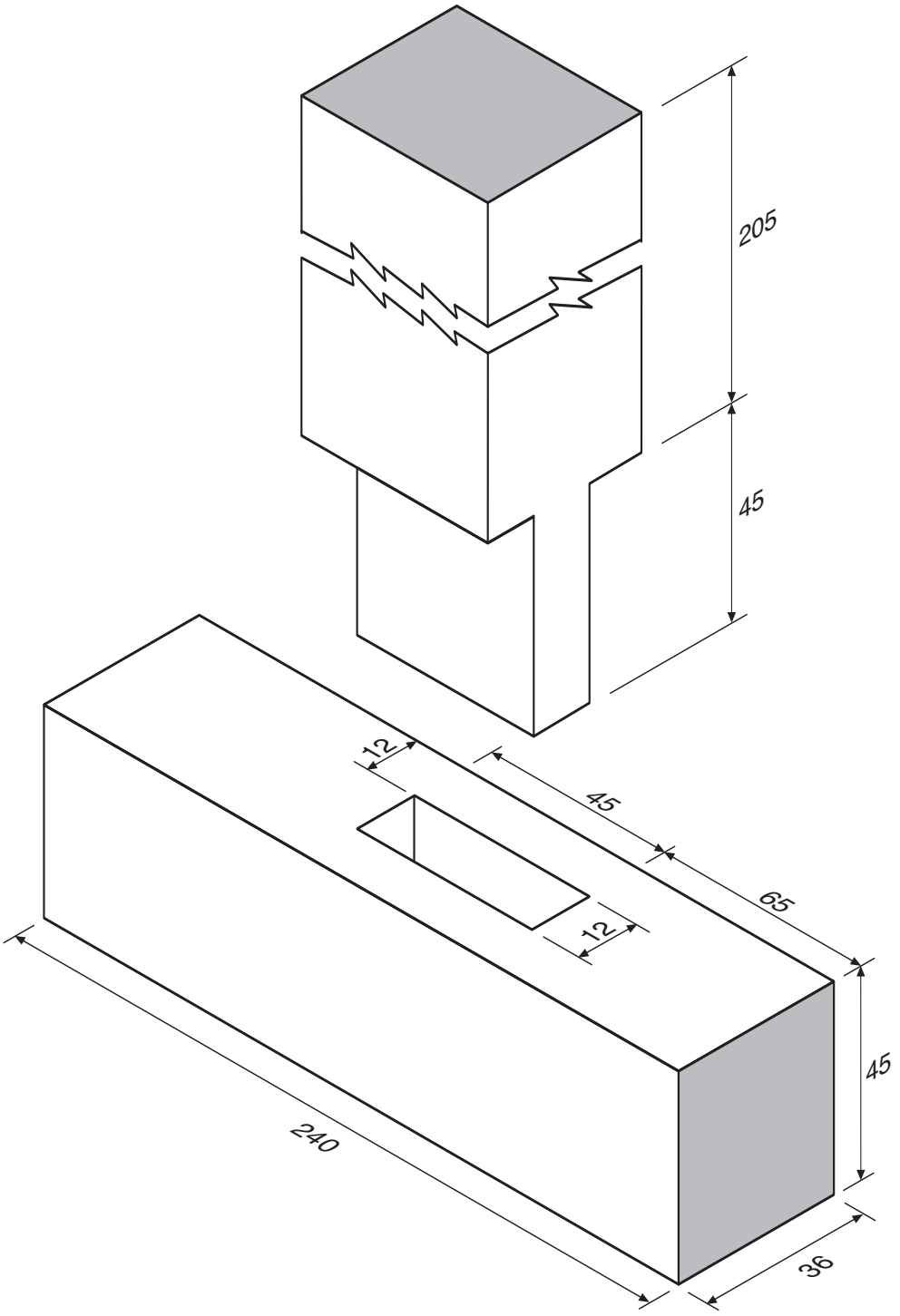
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 1

Mortise and tenon joints

Task: Using the mortise and tenon machines, manufacture the joint below using Red pine.



Task 1 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

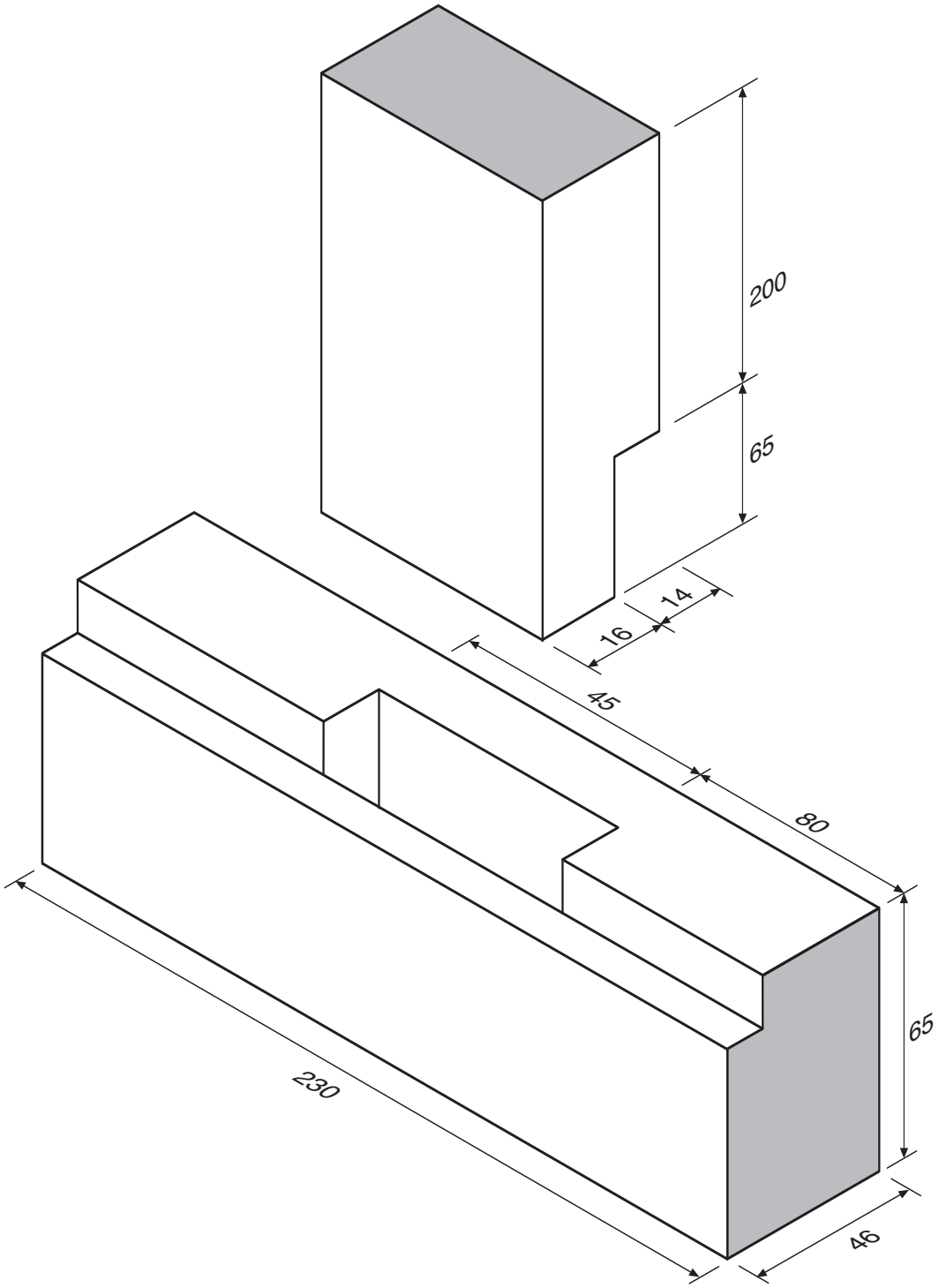
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 2

Mortise and tenon joints

Task: Using the mortise and tenon machines, manufacture the joint below using Red pine.



Task 2 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

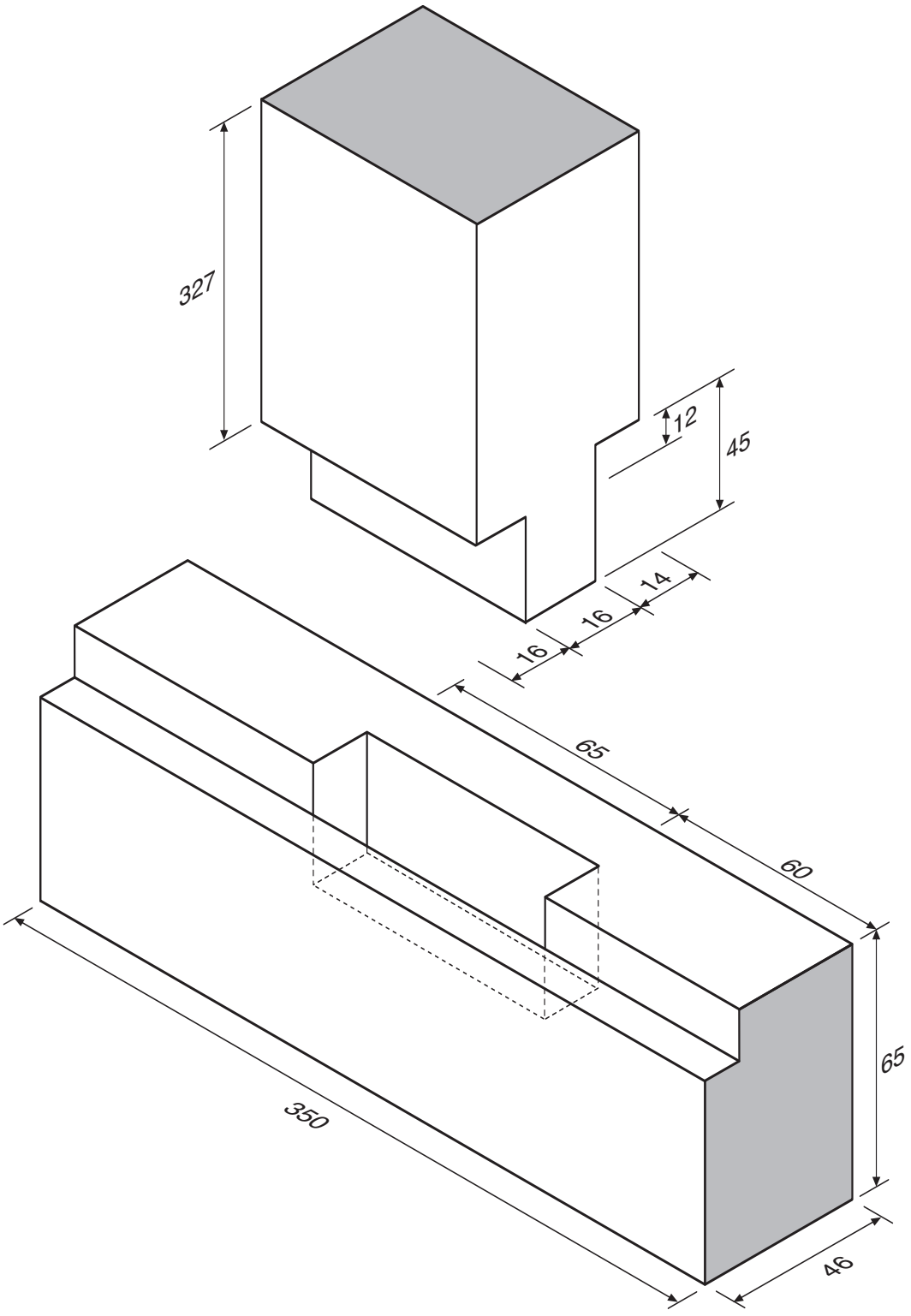
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 3

Mortise and tenon joints

Task: Using the mortise and tenon machines, manufacture the joint below using Red pine.



Task 3 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

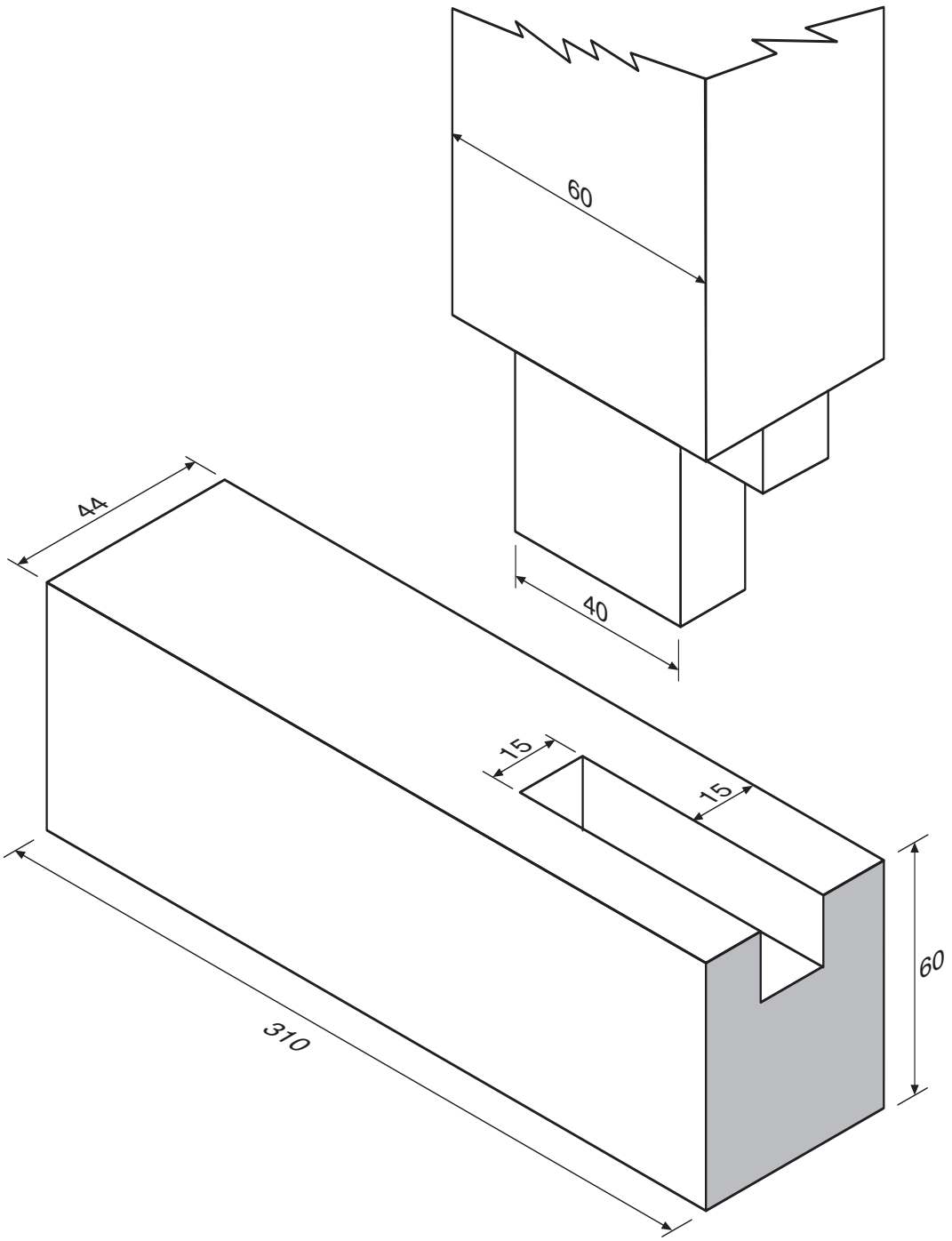
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 4

Mortise and tenon joints

Task: Using the mortise and tenon machines, manufacture the joint below using Red pine.



Task 4 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Test 1
Small stool

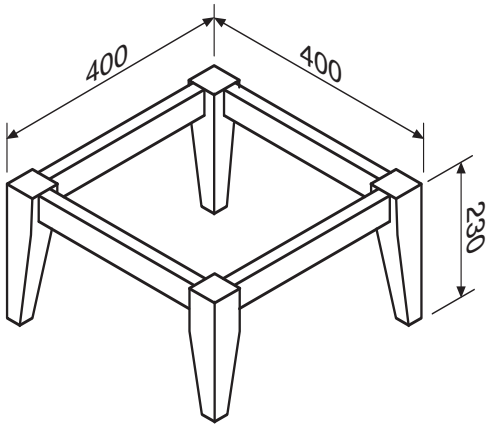
Task: Manufacture one stool frame as shown.

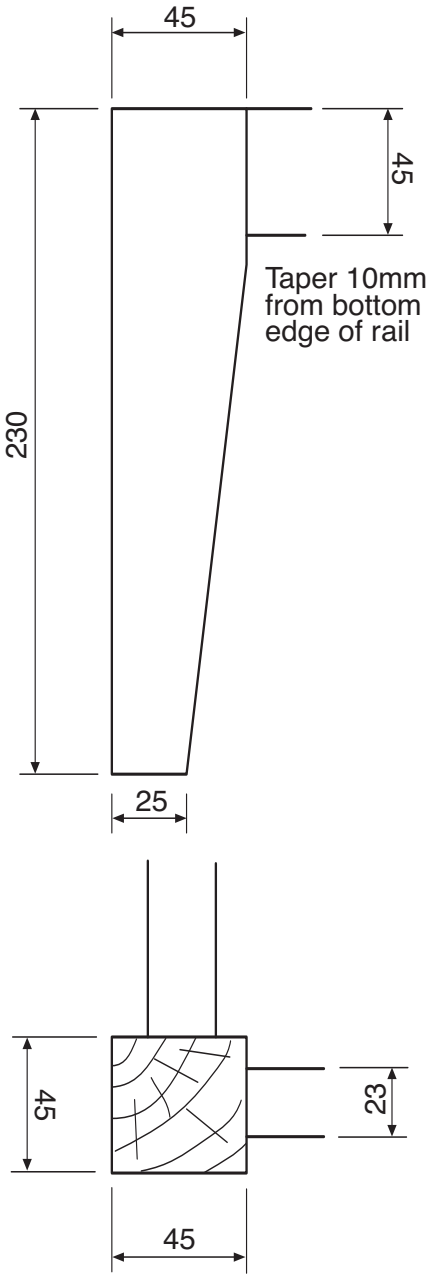
Machine used: Breaking out machines, mortise and tenon.

Instructions: Dress material to size and cross cut to length.

Set mortise and tenon materials to cut appropriate joints.

Rails to be flush fit with top of legs and centred across the 45mm face of leg.





Test 1 — Continued

Cutting list to be completed by candidate.

Name: _____ Class: _____ Date: _____

Cutting list — Test 1

Component	No.	Sawn Length	Sawn Width	Sawn Thickness	Finished Width	Finished Thickness	Comments/ Remarks

PASS/REFERRED

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Test 1 — Continued

Small stool (costing of timber)

Length	=	Lineal metres linm
Length x breadth	=	Square metres m^2
Length x breadth x thickness	=	Cubic metres m^3

Timber sold as:

- 100 linm (softwood)
- m^2 (board material, some softwood and hardwood)
- m^3 hardwood

Quantity	Description	Length	Breadth	Thickness	Cost Lin. m^2/m^3	Unit cost
					Total	
					Waste	
					VAT	
					Final Cost	

Test 1 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

Adhere photograph here

Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

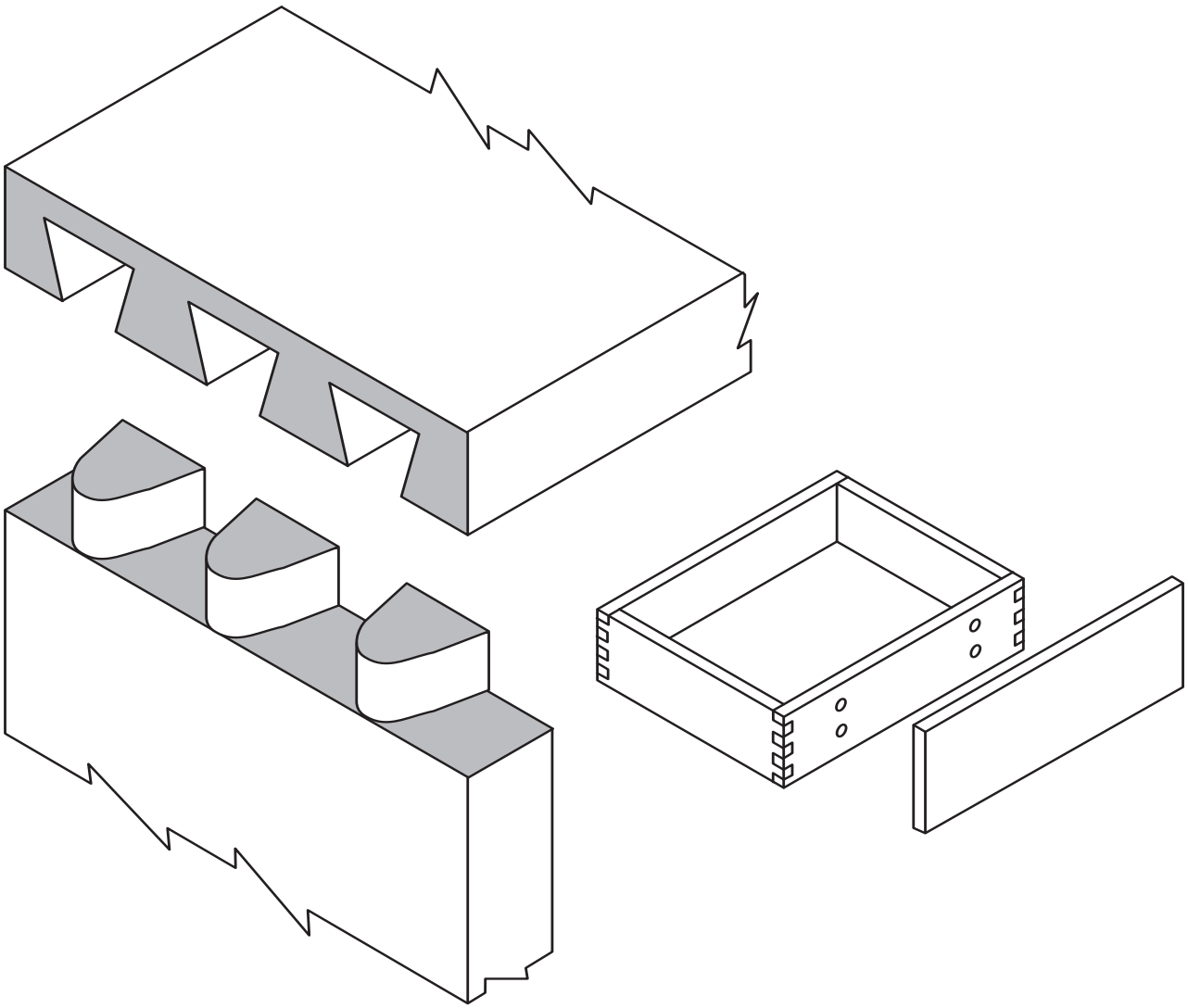
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 5

Drawer for bedside cabinet
(Produce Profiled Timber and Timber-based products)

Task: Using the dovetail machine (or suitable machine) manufacture a drawer to fit bedside cabinet manufactured previously in Unit.



Task 5 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

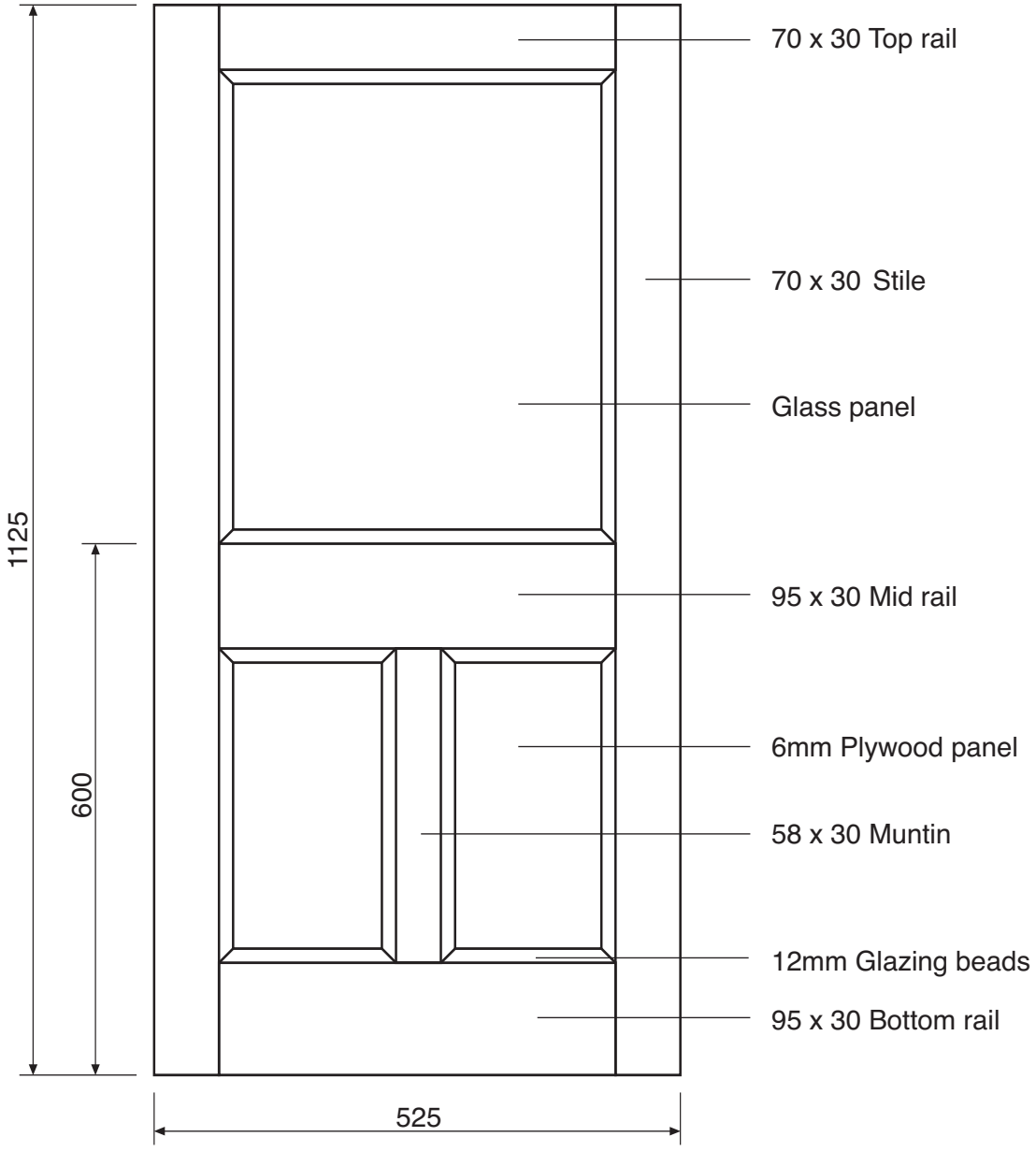
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Test 2

Semi-glazed door

Task: Manufacture door using breaking out machines, mortise and tenon machines and glazing bead with jig made previously in Unit **Produce Profiled Timber and Timber-based Products.** Use Redwood.



Test 2 — Continued

Cutting list to be completed by candidate.

Name: _____ Class: _____ Date: _____

Cutting list — Test 2

Component	No.	Sawn Length	Sawn Width	Sawn Thickness	Finished Width	Finished Thickness	Comments/ Remarks

PASS/REFERRED

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Test 2 — Continued

Semi-glazed door (costing of timber)

Length	=	Lineal metres linm
Length x breadth	=	Square metres m^2
Length x breadth x thickness	=	Cubic metres m^3

Timber sold as:

- 100 linm (softwood)
- m^2 (board material, some softwood and hardwood)
- m^3 hardwood

Quantity	Description	Length	Breadth	Thickness	Cost Lin. m^2/m^3	Unit cost
					Total	
					Waste	
					VAT	
					Final Cost	

Test 2 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

Adhere photograph here

Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

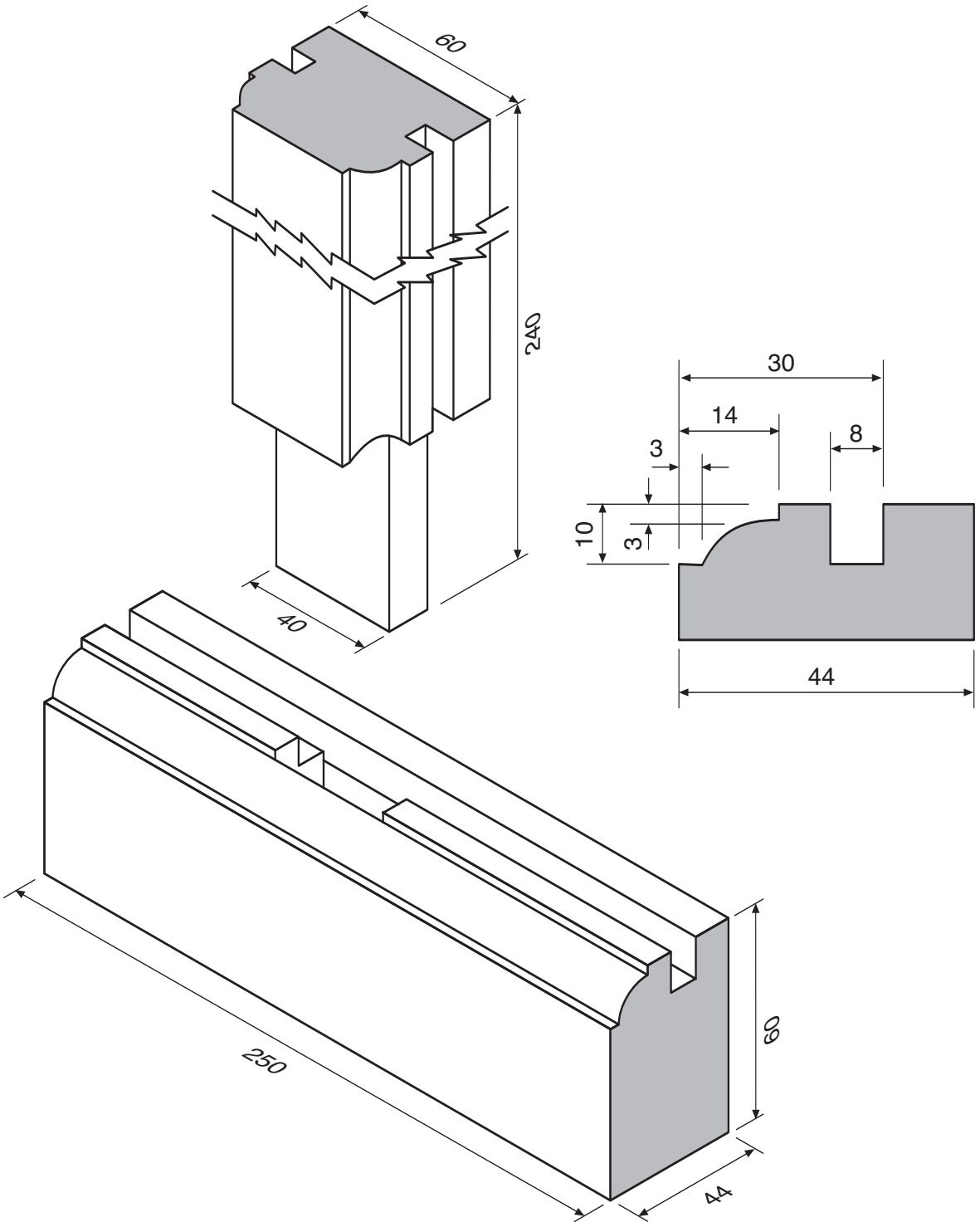
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 6

Mortise and tenon joints (with scribe)

Task: Using the mortise and tenon machines, manufacture the joint below.



Task 6 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

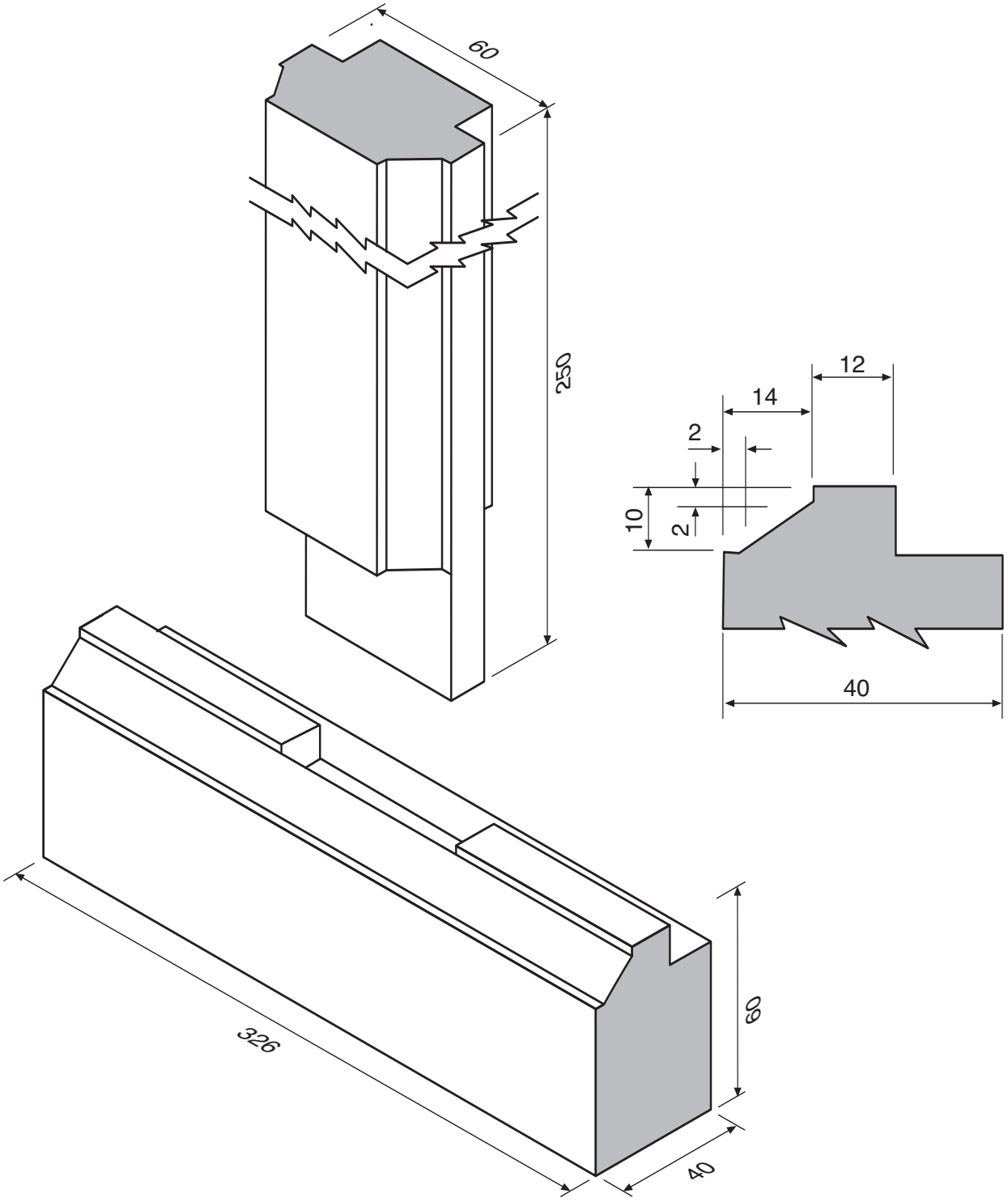
Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 7
Mortise and tenon joints (with scribe)

Task: Using the mortise and tenon machines, manufacture the joint below using Red pine.



Task 7 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

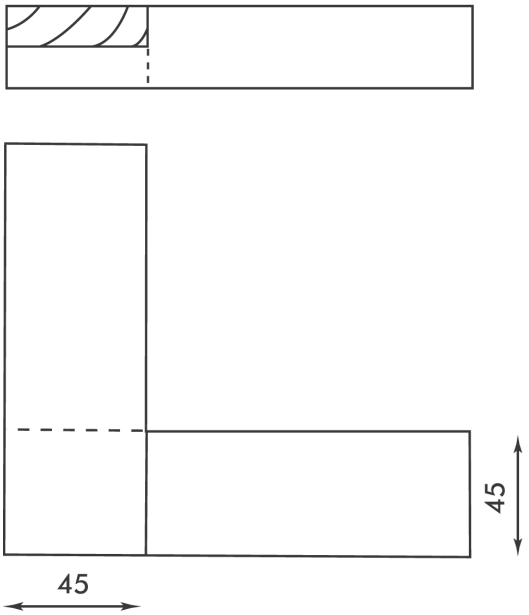
Internal verifier's signature: _____ Date: _____

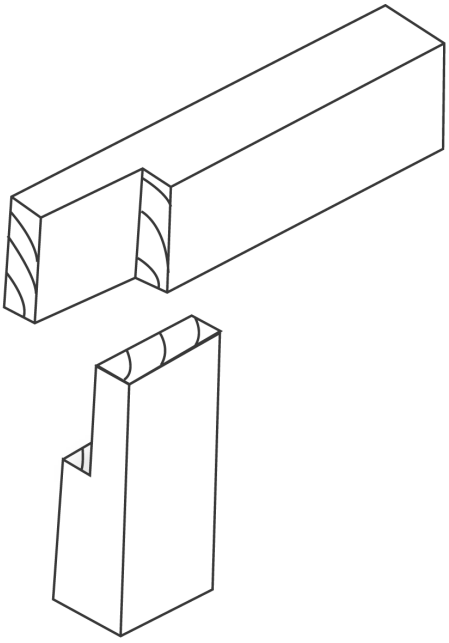
Element 2. Modify materials to form jointed timber and timber-based products

Task 8

Using hand tools attempt the following joints

Task: Corner halving.





This is a working sketch and is not a scale drawing

Task 8 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

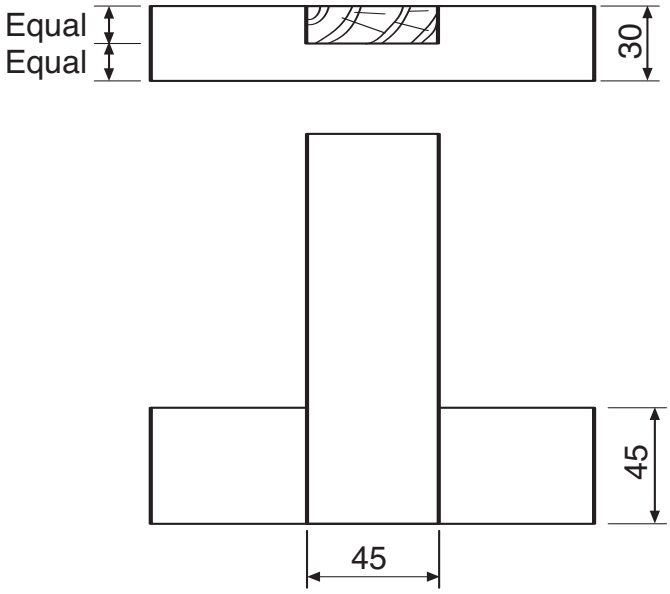
Internal verifier's signature: _____ Date: _____

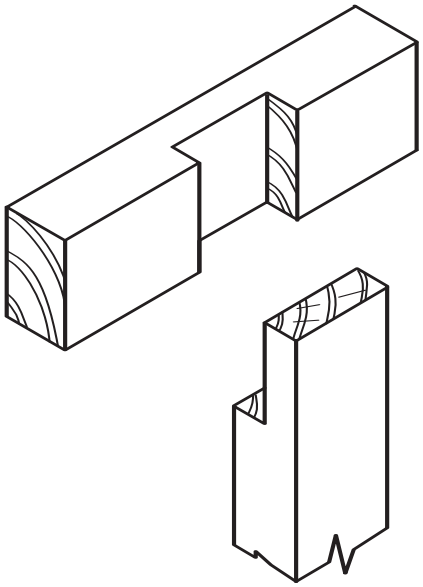
Element 2. Modify materials to form jointed timber and timber-based products

Task 9

Using hand tools attempt the following joints

Task: 'T' halving





Task 9 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

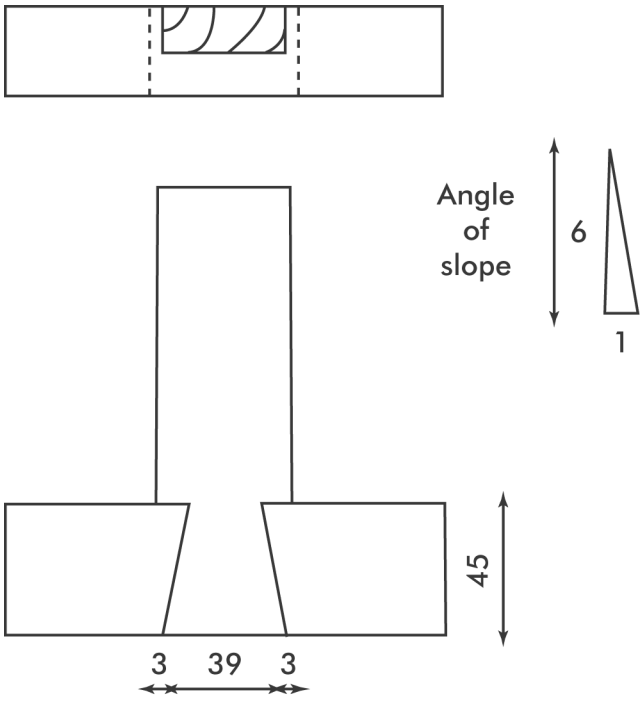
Internal verifier's signature: _____ Date: _____

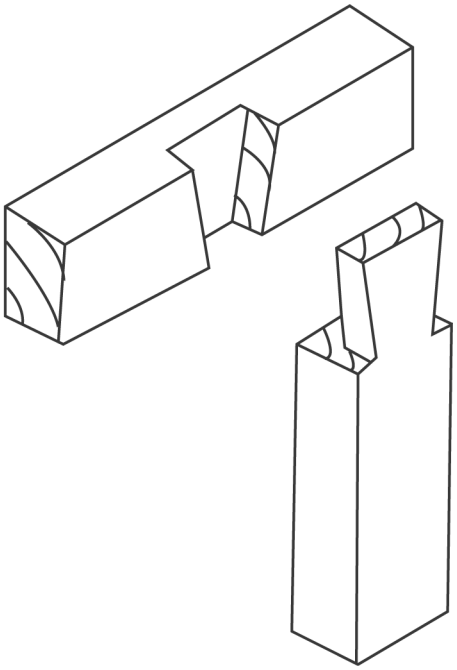
Element 2. Modify materials to form jointed timber and timber-based products

Task 10

Using hand tools attempt the following joints

Task: Dovetail halving





Task 10 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

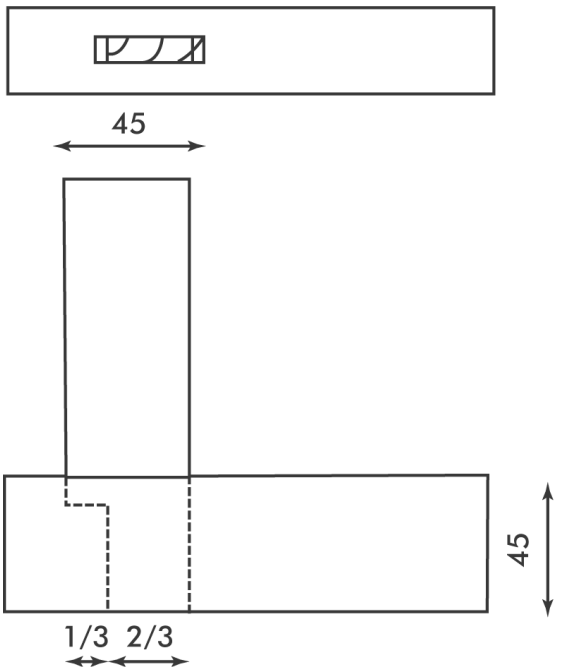
Internal verifier's signature: _____ Date: _____

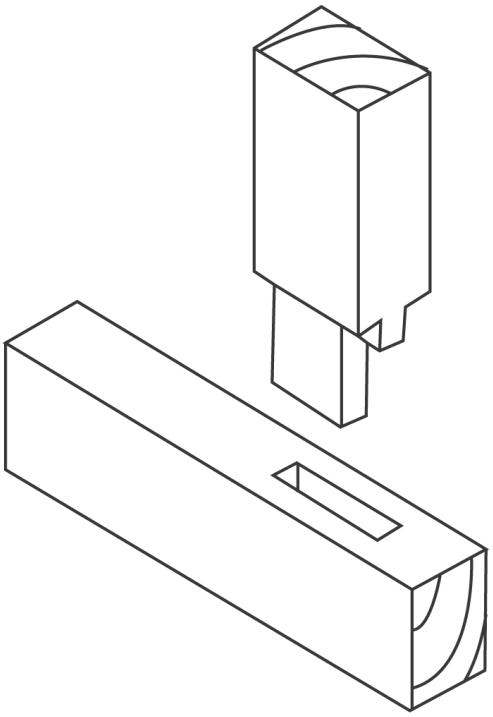
Element 2. Modify materials to form jointed timber and timber-based products

Task 11

Using hand tools attempt the following joints

Task: Through haunched mortise and tenon.





Task 11— Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 12

Hand skills exercise

Task: Using the appropriate hand tools manufacture the model below.

Material: 50 x 25 off saw.

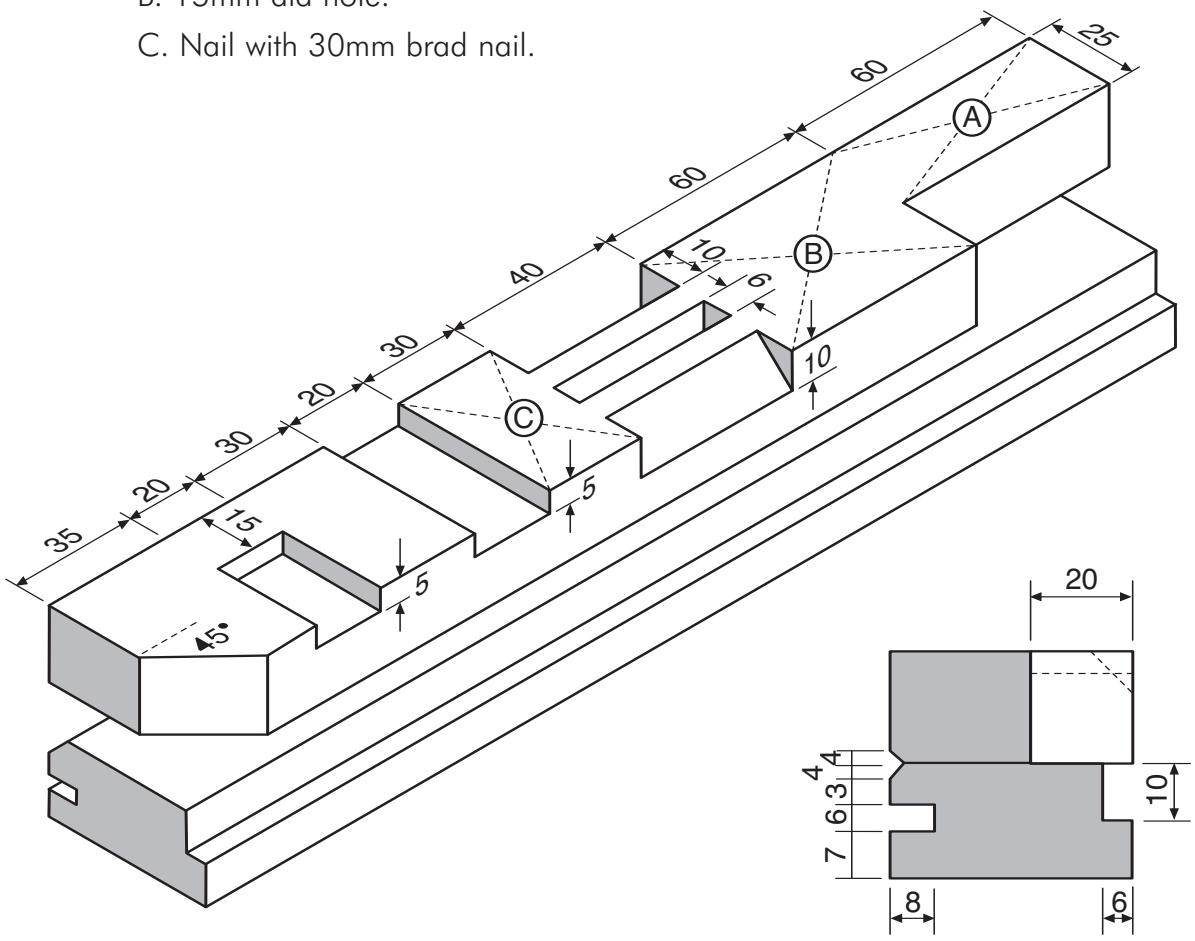
45 x 20 dressed all round.

Sub mortise 10mm deep.

A. 4mm hole countersunk and screwed.

B. 15mm dia hole.

C. Nail with 30mm brad nail.



Task 12— Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

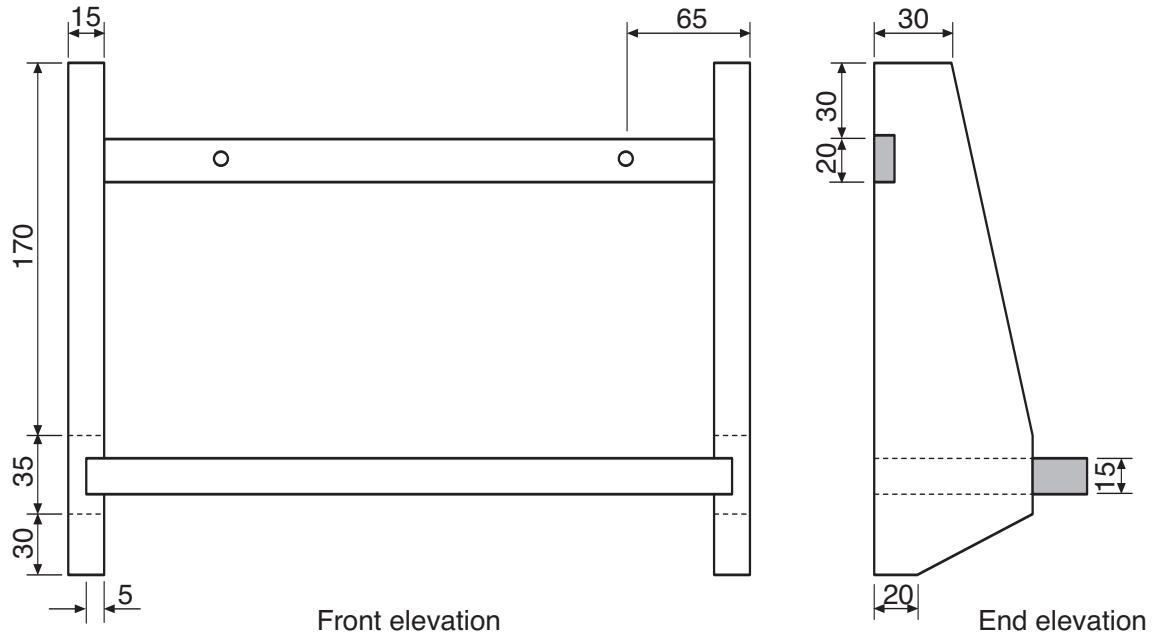
Internal verifier's signature: _____ Date: _____

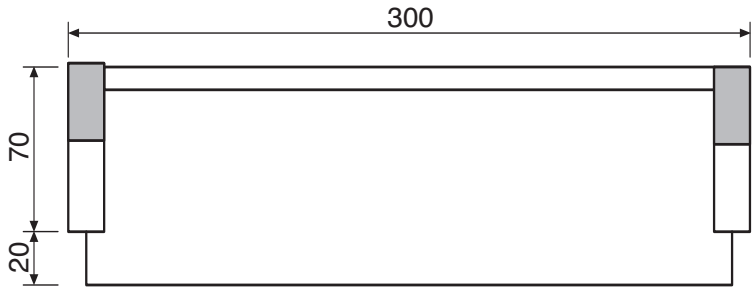
Element 2. Modify materials to form jointed timber and timber-based products

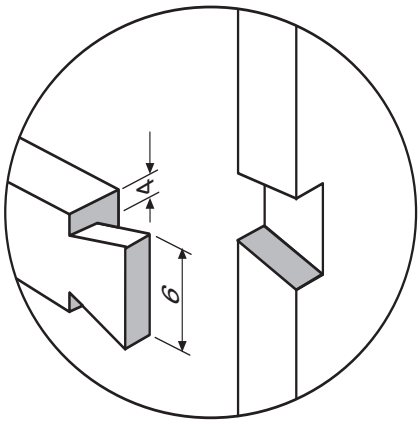
Test 3

Tape rack

Task: Using hand tools manufacture the project below.







Test 3 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

Adhere photograph here

Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

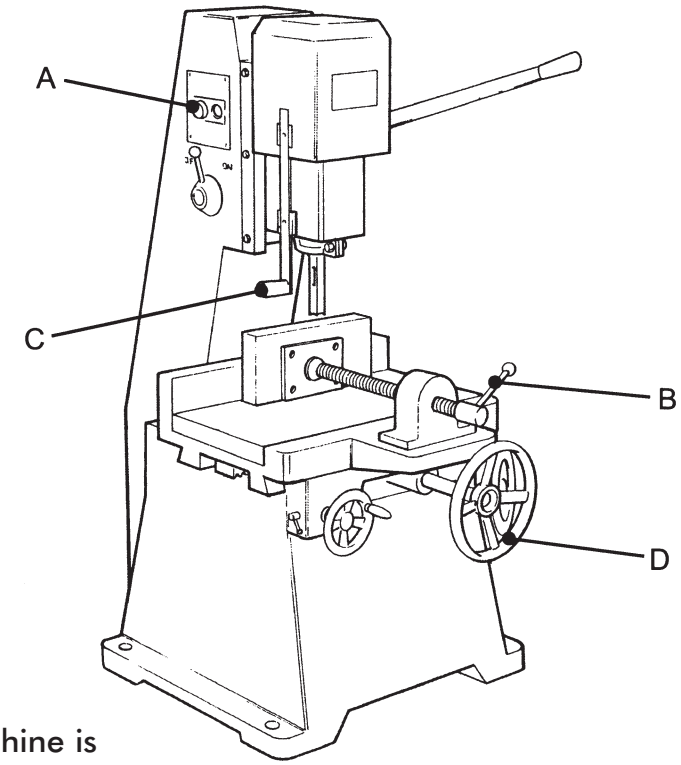
Task 13

Name the machine, machine parts and machine function

Worksheet 1

Q1a. The machine below is known as a

_____



Q1b. The function of the machine is

_____

_____

Q1c. Against the following letters place the correct name for the part shown in the diagram.

A. _____ C. _____ Stop

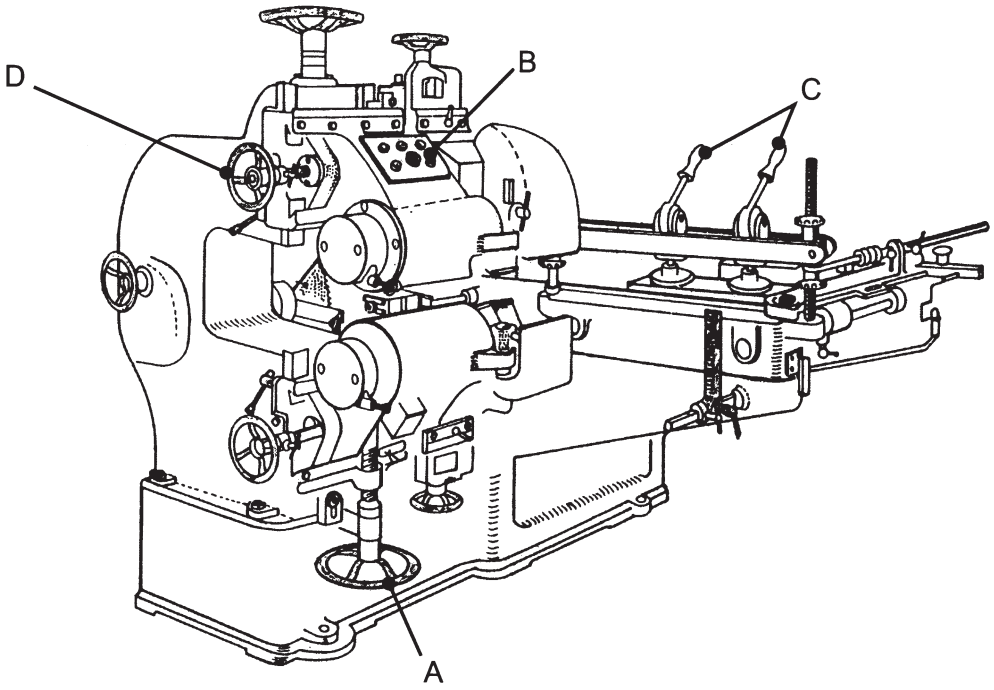
B. _____ D. _____

Task 13 — Continued

Worksheet 2

Q2a. The machine below is known as a

_____



Q2b. The function of the machine is

_____

_____

Q2c. Against the following letters place the correct name for the part shown in the diagram.

A. _____ C. _____

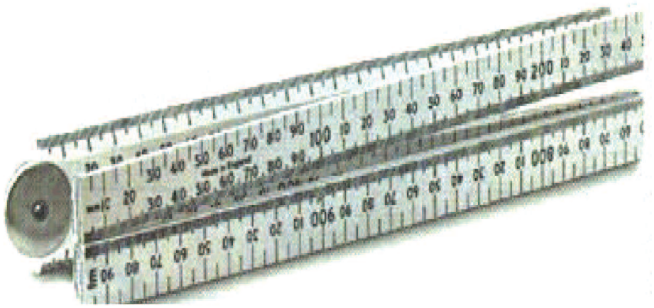
B. _____ D. _____

Element 2. Modify materials to form jointed timber and timber-based products

Task 14

Name all hand tools and their function

Q1. The tool below is known as a



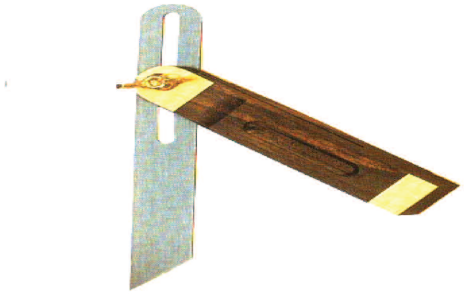
Q2. The function of the tool is

Q3. The tool shown here is known as a

Q4. The function of the tool is

Worksheet 3 — Continued

Q5. The tool shown here is known as a



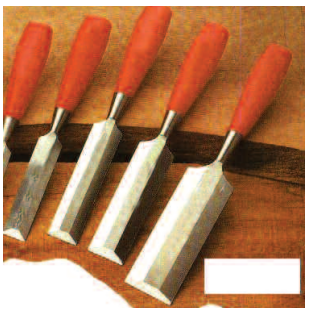
Q6. The function of the tool is

Q7. The tool shown here is known as a

Q8. The function of the tool is

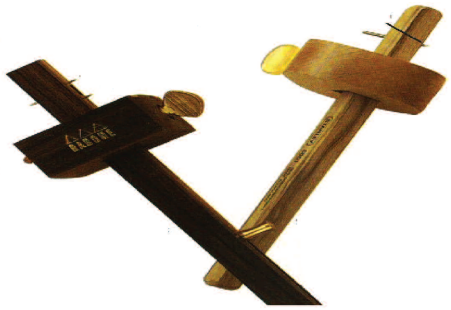
Worksheet 3 — Continued

Q9. The tool shown here is known as a



Q10. The function of the tool is

Q11. The tool shown here in is known as a



Q12. The function of the tool is

Paper A

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. How many machines can be oiled with a full one litre can of oil if each machine requires 35ml? (All workings to be shown.)

A 27

B 29

C 28

D 30

Q2. What foreign body found in timber can cause TCT saw teeth to break?

A Nails

B Knots

C Tight grain

D Dampness

Q3. The likely result of producing internal softwood doors using mortise and tenon construction with 25% moisture content is:

A the perfect joint

B the glue will keep the timber damp

C the timber will twist upon drying

D the door will be too heavy

Q4. Name a type of material used to tip tooling for use on abrasive timber.

A Diamond

B Mild steel

C High Speed Steel (H.S.S.)

Carbon steel

KNOWLEDGE EVIDENCE

Paper A — Continued

Q5. What should you do if you discover components are damaged?

A Report damages to the client

B Hope nobody sees them

C Report damages to the line manager

D Report damages to your mate

Q6. What is the name of the document that lists all the drawings relating to a job?

A The Bible

B User's manual

C Cutting lists

D Schedule

Q7. If 50 x 225 whitewood offsaw costs £537.30 per 100m, what would 175m cost? (All workings to be shown.)

A £600

B £940.30

C £1,040.30

D £1,750.30

Q8. Calculate the volume of a dust extraction silo with a height of 7m and a diameter top and bottom of 2m. (All workings to be shown.)

A 88.92

B 87.92

C 89.92

D 90.92

Paper A — Continued

Q9. How many lineal meters of skirting is required to fit round a storeroom measuring 15m x 30m, with a door width of 2m where the skirt stops? (All workings to be shown.)

A 88

B 150

C 450

D 45

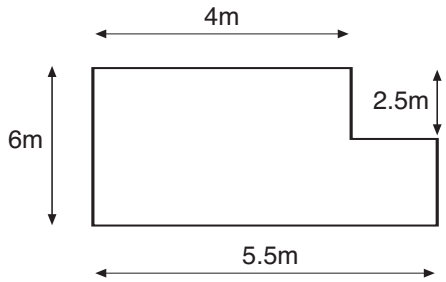
Q10. How many lineal meters of picture rail are needed for the composite room shown? (All workings to be shown.)

A 23lm

B 24lm

C 22lm

D 21lm



Q11. What is the main method of converting timber?

A Side to side

B Up and down

C Through and through

D Back to back

Q12. Wood dust is considered to be:

A explosive

B smelly

C dirty

D re-usable

KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Element 1 — Workings

KNOWLEDGE EVIDENCE

Paper A

Element 2. Modify materials to form jointed timber and timber-based products

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. To prevent hand tools from corroding, it is essential that they be kept:

A dry

B sharp

C well used

D brand new

Q2. With a view to ensuring that moving parts of hand tools operate freely, they should receive regular:

A sharpening

B use

C maintenance

D storage

Q3. Why is it important to maintain machines on a regular basis?

A So you don't get dirty

B Kills time

C Prolongs life of the machine

D So the machine looks good

Q4. To prevent breakout when operating a tenon machine we fit what to the machine?

A Top piece

B Middle piece

C Front piece

D Backing piece

KNOWLEDGE EVIDENCE

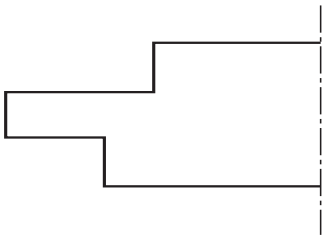
Paper A — Continued

Q5. The correct clearance distance between the mortise chisel points and the auger wings is:

A 1mm
B 1.5mm
C 2mm
D 0.5mm

Q6. The type of tenon shown below known as a:

A stepped tenon
B square tenon
C staggered tenon
D scribed tenon



Q7. A type of stop used on a single end tenon machine is:

A hidden
B end
C beginning
D timber

Q8. Under normal use, when mortising into 45mm thick timber, the size of the chisel would be:

A 10mm
B 13mm
C 11mm
D 15mm

Paper A — Continued

Q9. Before changing the cutters on a tenon machine you must do what?

A Start machine

B Clean machine

C Isolate machine

D. Set machine

Q10. When lubricating the slides on a mortise machine, what type of lubricant would you use?

A Grease

B Oil

C Water

D White Spirit

Q11. According to current legislation, how quickly must the cutter heads stop on a tenon machine?

A Within 5 seconds

B Within 10 seconds

C Within 15 seconds

D Within 20 seconds

Q12. When chisels are not being used they should be stored so that the edges are:

A bunt

B sharp

C covered

D none of the above

KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

Paper A

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 6 correct out of 8.

Q1. What is the main reason that young people are more likely to be involved in a site accident?

A They often have to work unsupervised in dangerous situations

B They do not receive any safety training

C They are inexperienced and may not recognise danger

D The safety rules don't apply until they are 18 years old

Q2. Why should you wear barrier cream when working with hazardous substances?

A It can prevent you from getting skin dermatitis

B It stops your hands from sticking to things

C It helps you to get a better hold on your tools

D It keeps your skin nice and smooth

Q3. How often should you check a hand-held power tool?

A It should be checked once every week

B It is not your responsibility to check tools

C Every time the tool is used

D According to the manufacturer's instructions

Q4. When using PPE issued by your employer, legally you must:

A replace it at your own expense if you damage it

B not abuse it, or alter it in any way

C take it home with you every night

D return it to the site store each evening

KNOWLEDGE EVIDENCE

Paper A — Continued

Q5. In making an assessment of the risks involved before lifting a load you should consider:

A its weight

B it's centre of gravity

C its size and condition

D all of the above

Q6. How often must a fire extinguisher be checked?

A Every 12 months

B Daily

C Every 6 months

D Every time it is used

Q7. If you discover a serious fire at work, the first thing you should do is:

A dial 999 immediately

B raise the alarm for your fellow workers

C run around looking for a fire extinguisher

D report it to your supervisor immediately

Q8. While working you get a small cut on your finger. What should you do?

A Wash it and keep it clean for the rest of the day

B Wash it and tell your supervisor it happened

C Report it and get first aid if required

D Do nothing as at is only a small cut

KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 6 correct out of 8.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Paper A — Model Answers

Element 1

1	C
2	A
3	C
4	A
5	C
6	D
7	B
8	B
9	A
10	A
11	C
12	A

Element 2

1	A
2	C
3	C
4	D
5	B
6	C
7	A
8	D
9	C
10	A
11	B
12	C

Element 3

1	C
2	A
3	C
4	B
5	D
6	A
7	B
8	C

Paper B

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. What is the main method of converting timber?

A Through and through

B Up and down

C Side to side

D Back to back

Q2. How many lineal meters of skirting is required to fit round a storeroom measuring 15m x 30m with a door width of 2m where the skirt stops? (All workings to be shown.)

A 45

B 150

C 450

D 88

Q3. If 50 x 225 Whitewood Offsaw costs £537.30 per 100m, what would 175m cost? (All workings to be shown.)

A £600

B £1,040.30

C £940.30

D £1,750.30

Q4. What foreign body found in timber can cause TCT saw teeth to break?

A Knots

B Nails

C Tight grain

D Dampness

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. Wood dust is considered to be:

A dirty
B smelly
C explosive
D re-usable

Q6. The likely result of producing internal softwood doors using mortise and tenon construction with 25% moisture content is:

A the timber will twist upon drying
B the door will be too heavy
C the perfect joint
D the glue will keep the timber damp

Q7. Calculate the volume of a dust extraction silo with a height of 7m and a diameter top and bottom of 2m. (All workings to be shown.)

A 88.92
B 90.92
C 89.92
D 87.92

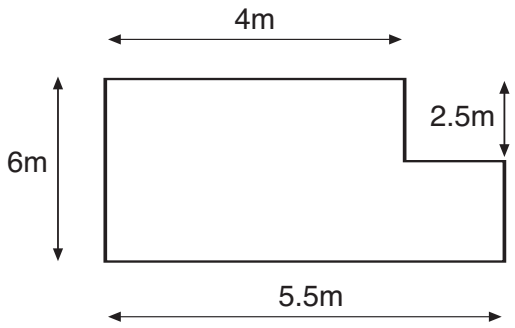
Q8. Name a type of material used to tip tooling for use on abrasive timber.

A Carbon steel
B Mild steel
C High speed steel (H.S.S.)
D Diamond

Paper B — Continued

Q9. How many lineal meters of picture rail are needed for the composite room shown here? (All workings to be shown.)

A 24lm
B 23lm
C 21lm
D 22lm



Q10. How many machines can be oiled with a full one litre can of oil if each machine requires 35ml? (All workings to be shown.)

A 28
B 27
C 29
D 30

Q11. What should you do if you discover components are damaged?

A Report the damages to the client
B Report damages to the line manager
C Hope nobody sees them
D Report damages to your mate

Q12. What is the name of the document that lists all the drawings relating to a job?

A User's manual
B Bible
C Schedule
D Cutting lists

KNOWLEDGE EVIDENCE

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Element 1 — Workings

Paper B

Element 2. Modify materials to form jointed timber and timber-based products

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. According to current legislation, how quickly must the cutter heads stop on the Tenon machine?

A Within 5 seconds

B Within 20 seconds

C Within 15 seconds

D Within 10 seconds

Q2. A type of stop used on a single-end Tenon machine is:

A beginning

B hidden

C end

D timber

Q3. Under normal use, when mortising into 45mm thick timber, the size of the chisel would be:

A 15mm

B 10mm

C 13mm

D 11mm

Q4. With a view to ensuring that moving parts of hand tools operate freely, they should receive regular:

A maintenance

B sharpening

C use

D storage

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. To prevent breakout when operating a Tenon machine, we fit what to the machine?

A Front piece
B Middle piece
C Backing piece
D Top piece

Q6. Why is it important to maintain machines on a regular basis?

A So you don't get dirty
B It kills time
C So the machine looks good
D It prolongs the life of the machine

Q7. Before changing the cutters on the Tenon machine you must do what?

A Start machine
B Isolate machine
C Clean machine
D Set machine

Q8. When lubricating the slides on a Mortise machine you would use what type of lubricant?

A White Spirit
B Grease
C Water
D Oil

Paper B — Continued

Q9. When chisels are not being used they should be stored so that the edges are:

A sharp

B blunt

C covered

D none of the above

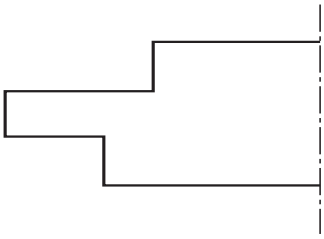
Q10. What type of tenon is shown here?

A Staggered

B Square

C Stepped

D Scribed



Q11. The correct clearance distance between the mortise chisel points and the auger wings is:

A 1mm

B 2mm

C 1.5mm

D 0.5mm

Q12. To prevent hand tools from corroding, it is essential that they be kept:

A sharp

B well used

C brand new

D dry

KNOWLEDGE EVIDENCE

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 2. Modify materials to form jointed timber and timber-based products

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

Paper B

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 6 correct out of 8.

Q1. Why should you wear barrier cream when working with hazardous substances?

A It helps you to get a better hold on your tools

B It stops your hands from sticking to things

C It can prevent you from getting skin dermatitis

D It keeps your skin nice and smooth

Q2. In making an assessment of the risks involved before lifting a load you should consider:

A all of the above

B its size and condition

C its centre of gravity

D its weight

Q3. While working you get a small cut on your finger. What should you do?

A Wash it and keep it clean for the rest of the day

B Report it and get first aid if required

C Do nothing as at is only a small cut

D Wash it and tell your supervisor it happened

Q4. If you discover a serious fire at work, the first thing you should do is:

A raise the alarm for your fellow workers

B dial 999 immediately

C run around looking for a fire extinguisher

D report it to your supervisor immediately

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. What is the main reason that young people are more likely to be involved in a site accident?

A They often have to work unsupervised in dangerous situations

B They do not receive any safety training

C The safety rules don't apply until they are 18 years old

D They are inexperienced and may not recognise danger

Q6. When using PPE issued by your employer, legally you must:

A take it home with you every night

B return it to the site store each evening

C replace it at your own expense if you damage it

D not abuse it, or alter it in any way

Q7. How often should you check a hand-held power tool?

A It should be checked once every week

B Every time the tool is used

C It is not your responsibility to check tools

D According to the manufacturer's instructions

Q8. How often must a fire extinguisher be checked?

A Every 6 months

B Daily

C Every 12 months

D Every time it is used

KNOWLEDGE EVIDENCE

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 6 correct out of 8.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Paper B — Model Answers

Element 1

1	A
2	D
3	C
4	B
5	C
6	A
7	D
8	D
9	B
10	A
11	B
12	C

Element 2

1	D
2	B
3	A
4	A
5	C
6	D
7	B
8	B
9	C
10	A
11	C
12	D

Element 3

1	C
2	A
3	B
4	A
5	D
6	D
7	B
8	C

SVQ

Training and
Assessment Programme

WOOD MACHINING

Produce Bored Timber and Timber-based Products

SBATC

SCOTTISH QUALIFICATIONS AUTHORITY

5. PRODUCE BORED TIMBER AND TIMBER-BASED PRODUCTS

INTRODUCTION

On successful completion of this Unit, the candidate will be able to use various woodworking machines which include: Pedestal drill, High speed router, Multi boring machine and a number of woodworking power tools. The candidate will be assessed on accuracy when preparing cutting list, costing and manufacture of the CD holder and step ladders.

Teaching Guidelines

Candidates must draw all projects before attempting to manufacture.

Candidates must also make up a cutting list for the following project:

Small stool

CD holder

Step ladders

All machines and powertools must be maintained according to the manufacturers' specifications before use.

All finished projects must be working towards industrial tolerances of:

±0.5mm for break out material

±1mm for overall size

All sizes are in millimetres unless otherwise stated.

Core Skills

Communication will be assessed as candidates work individually but in contact with a member of staff, or communicate with other candidates. **Numeracy** will be assessed throughout the Unit. Drawing will be assessed as part of the formative assessment material. **Problem solving** will be assessed, as candidates will be required to overcome machining and assembling difficulties.

Generic Units

There will be opportunities during this Unit to assess certain elements of the generic Units as candidates will have to communicate with others and contribute to efficient working practices, together with setting up and maintaining the working area which in general develops the ability to work in a professional manner.

Underpinning knowledge

The knowledge and understanding required for this Unit should be taught in tandem with the practical work of this Unit. It follows therefore that the assessment of performance evidence and knowledge evidence should be done around the same time. This knowledge and understanding will be assessed with the objective test questions provided, and those assessments will be conducted in a 'closed book' format.

Element 1. Prepare, set up and establish suitability of machinery and materials

Report Sheet 1

Candidate's name _____

Class _____

Date _____

Discrepancies in information

It has been noted that the above discrepancies have been found.

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Risk assessment and method statement to be completed by candidate.

Name: _____ Class: _____ Date: _____

Risk assessment

Method statement

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Candidates must draw all projects before attempting to manufacture.

The candidate must also make up a cutting list and cost the following projects:

Small stool

CD holder

Step ladders

A rod to be made up for stool.

All machines and power tools used must be maintained according to the manufacturer's specifications.

All finished projects must be working towards industrial tolerances of:

±0.5mm for break out material.

+±1mm for overall size.

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

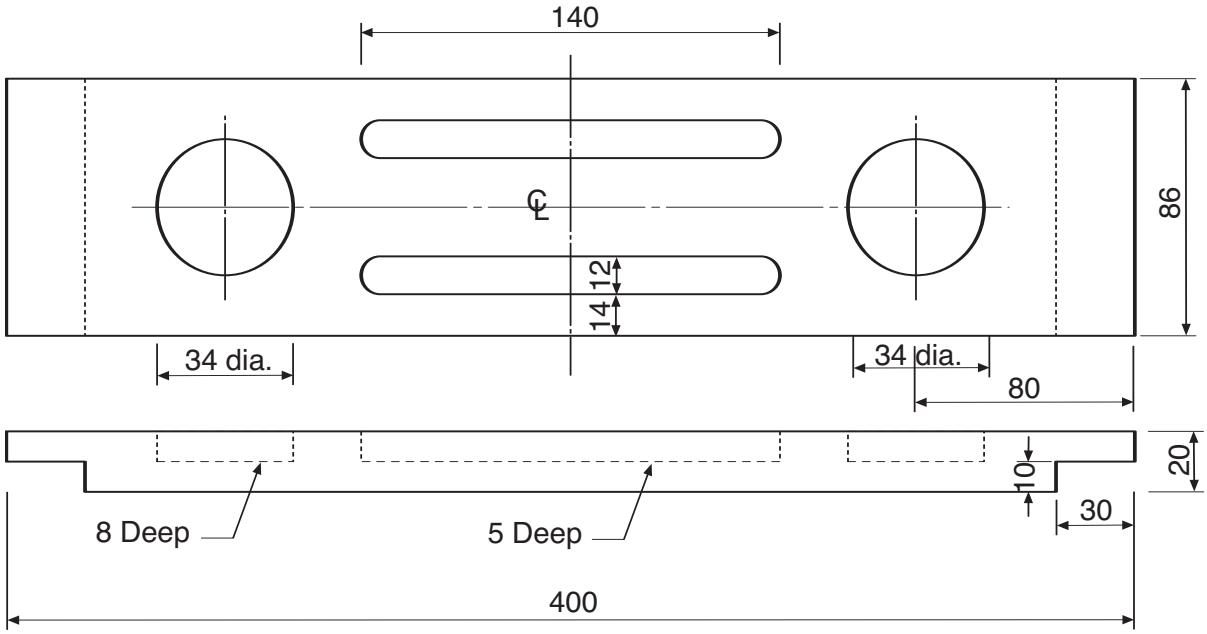
Element 2. Modify materials to form bored timber and timber-based products

Task 1

Work holder

Sequence of operations:

1) Manufacture workholder for high speed router.
2) Cut and dress material to finished sizes.
3) Perform bare faced tenon on single end tenon machine.
4) Set appropriate cutter equipment on high speed router.
5) Using jigs manufacture material to the detail below.



Task 1 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

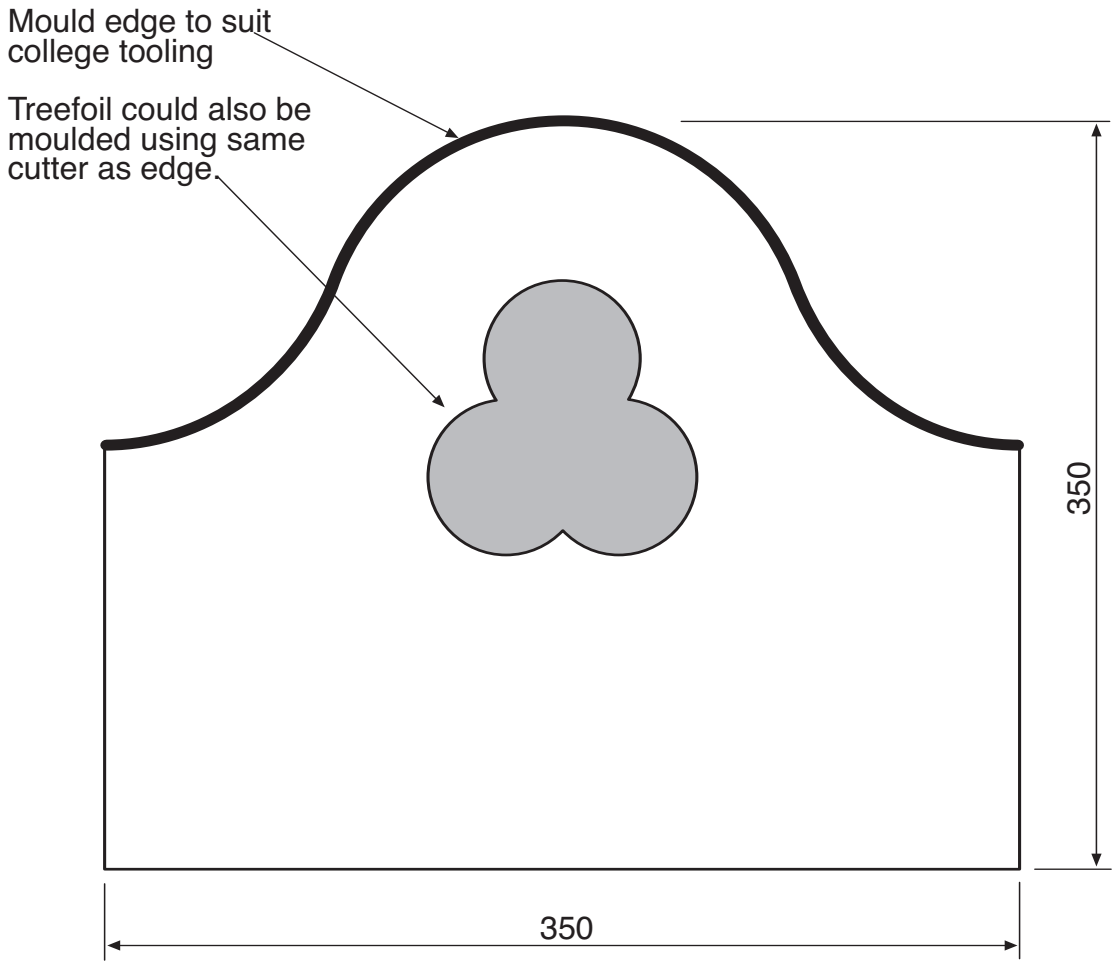
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Task 2

High speed router

Task: Manufacture a jig to machine the Treefoil shown below using the high speed router.



Task 2 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Test 1

Small CD holder (high speed router)

Task:

Dimension the drawing using appropriate sizes. (Consult your lecturer.)

Make a cutting list.

Break out material (MDF).

Machine the housings on gables at high speed router using your own jig. (Consult your lecturer.)

Rebate top, bottom and gables for back.

Cut toe-space on gables at narrow bandsaw.

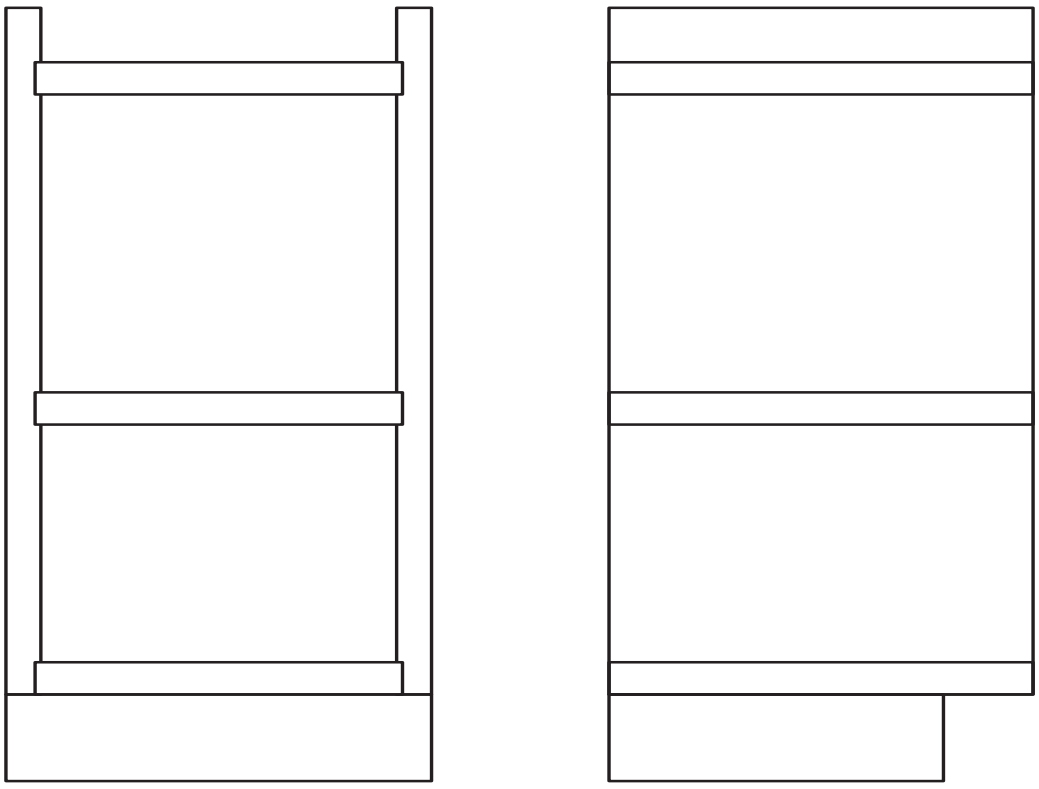
Mould a pencil round on the front edges.

Glue and assemble

Cut toe-space on gables at narrow bandsaw.

Mould a pencil round on the front edges.

Glue and assemble.



Test 1 — Continued

Cutting list to be completed by candidate.

Name: _____ Class: _____ Date: _____

Cutting list — Test 1

Component	No.	Sawn Length	Sawn Width	Sawn Thickness	Finished Width	Finished Thickness	Comments/ Remarks

PASS/REFERRED

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Test 1 — Continued

Bedside cabinet (costing of timber)

Length	=	Lineal metres linm
Length x breadth	=	Square metres m^2
Length x breadth x thickness	=	Cubic metres m^3

Timber sold as:

- 100 linm (softwood)
- m^2 (board material, some softwood and hardwood)
- m^3 hardwood

Quantity	Description	Length	Breadth	Thickness	Cost Lin. m^2/m^3	Unit cost
					Total	
					VAT	
					Final cost	

Test 1 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

Adhere photograph here

Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

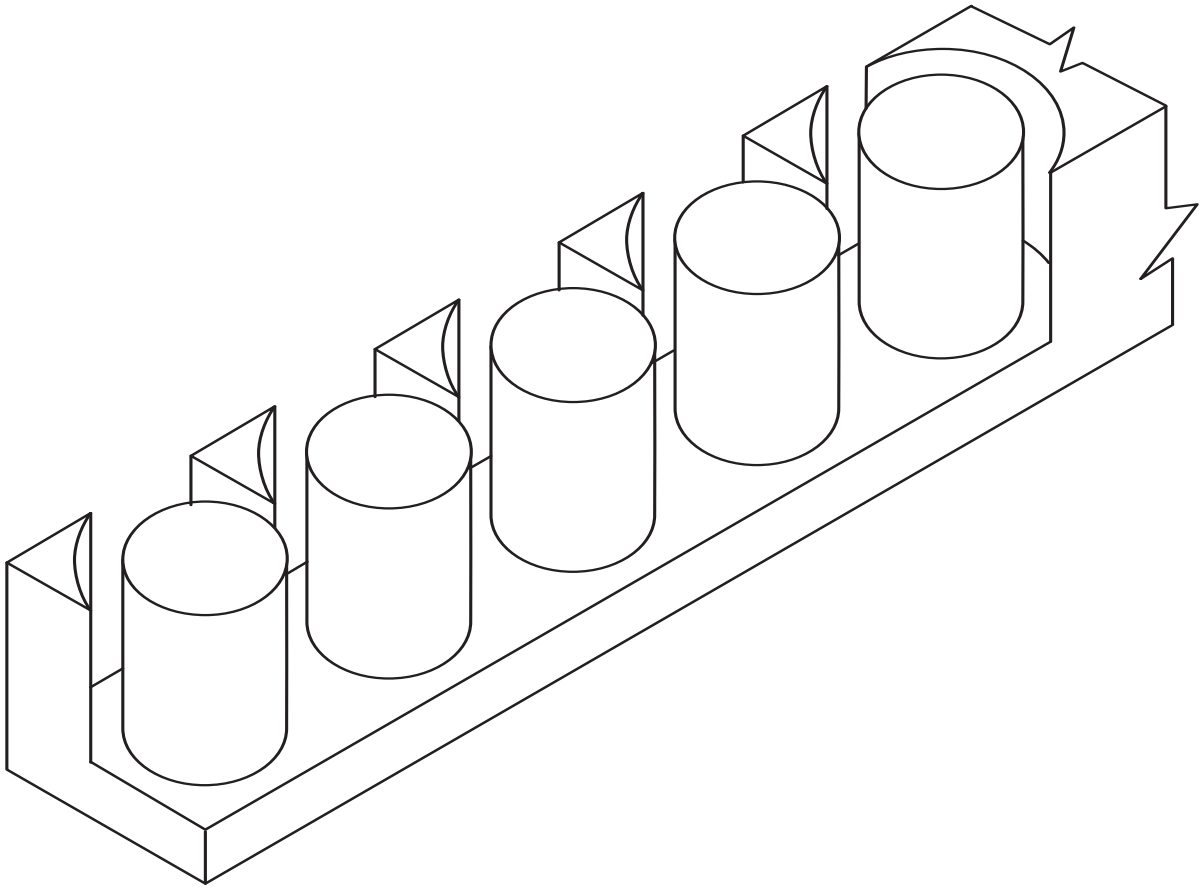
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Task 3

Pedestal drill

Given:	One softwood, one hardwood — 200 x 16 x 16 or to suit available plug cutter.
Task:	Cut plugs.
Machine used:	Vertical boring machine.
Instructions:	Mount plug cutter on pedestal drill and select suitable speed. Set depth stop to leave 4mm mount.



Task 3 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

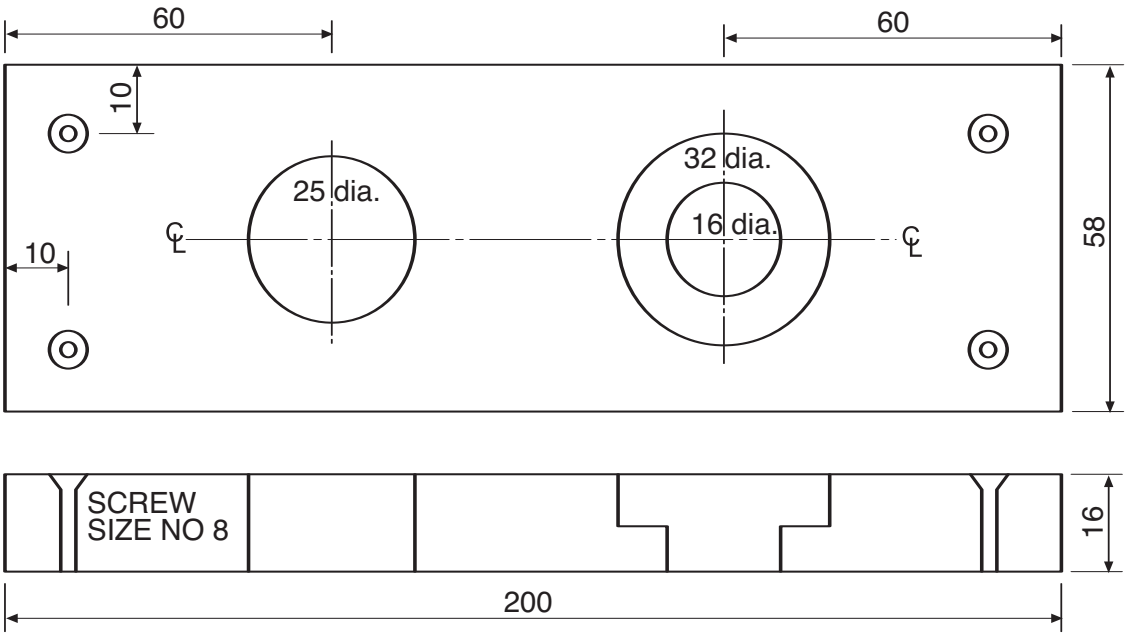
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Task 4

Pedestal drill

Given:	Two pieces Red pine 200 x 58 x 16 DAR.
Task:	Bore to drawing.
Machine used:	Pedestal boring machine.
Instructions:	Select a drill and countersink bit for given wood screw.
	Set machine and drill at four corners. Set machine, changing speed if necessary, and bore 25mm, 32mm and 16mm holes. Adjustable drill may be used.
	Drill bits to suit college.



Task 4 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

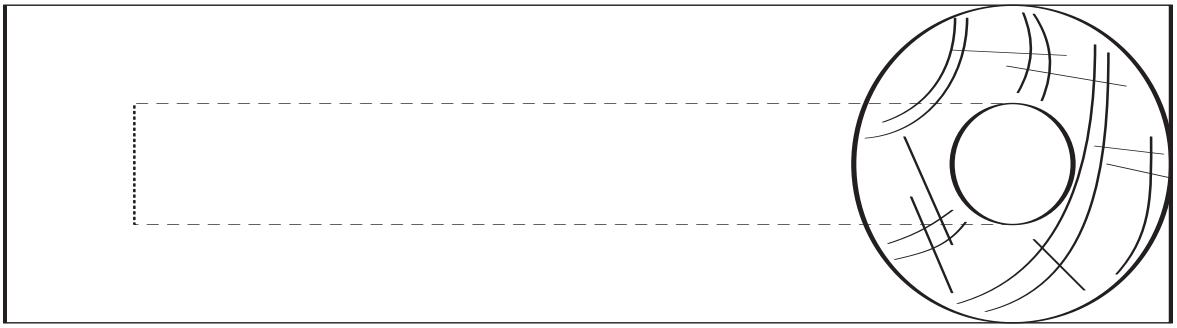
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Task 5

Wood turning lathe

Given:	Cylinder from Worksheet No 1.
Task:	Deep bore using hand auger (Jacob chuck).
Machine used:	Wood turning lathe.
Instructions:	Mount cylinder on lathe.
	Select correct speed.
	Support free end of cylinder.
	Bore to within 25mm of fixed end using auger as available.
	Auger to suit college.



Task 5 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

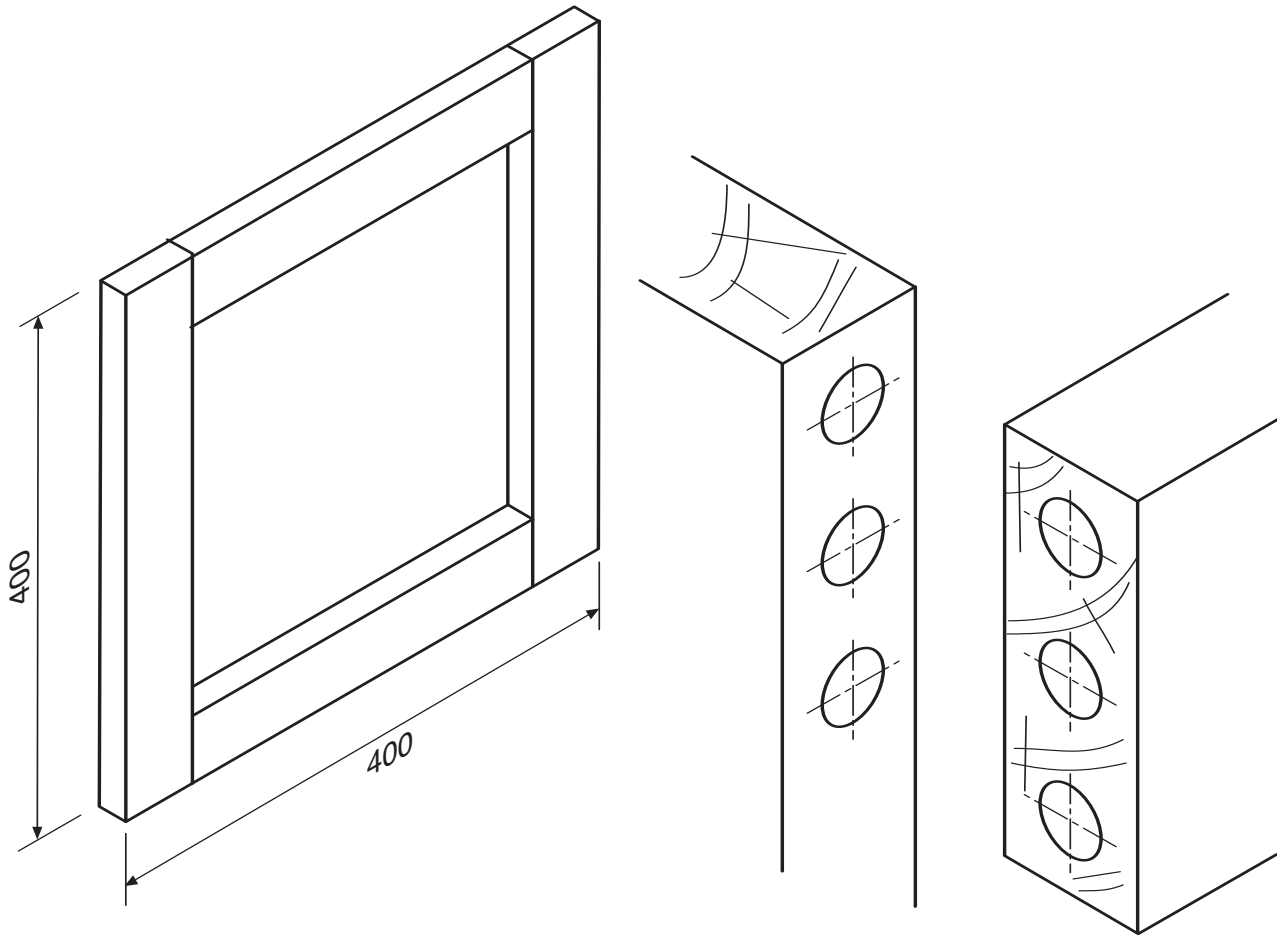
Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Task 6

Bored square frame

Given:	Softwood DAR 58 x 23 x 2/400, 2/284
Task:	Make square frame with dowel joints.
Machine used:	Horizontal boring machine.
Instructions:	Mark centres of holes, 10mm diameter, on workpieces ensuring that they are centred on width and thickness.
	Bore end of short length and edge of longer length.
	Depth to be half length of dowel plus 1mm.
	Insert dowels and assemble.



Task 6 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

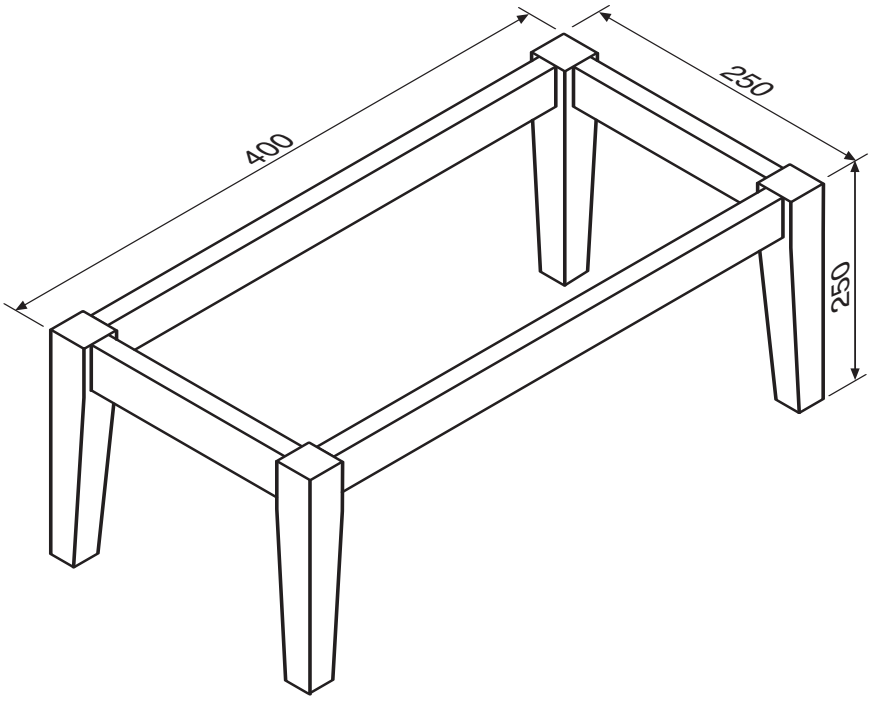
Internal verifier's signature: _____ Date: _____

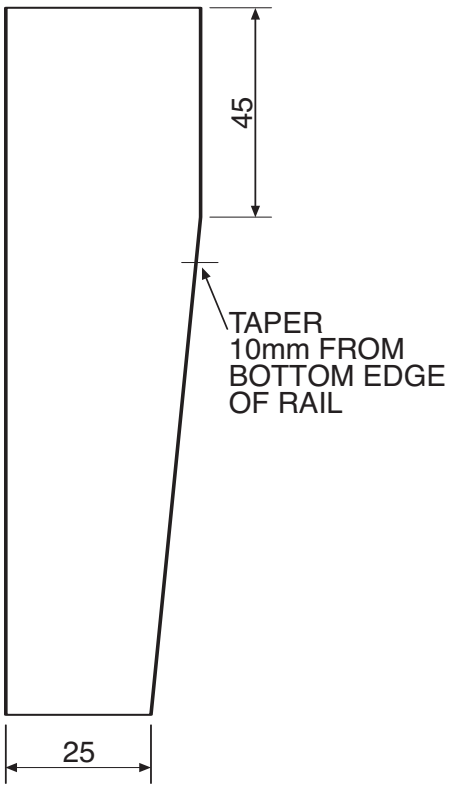
Element 2. Modify materials to form bored timber and timber-based products

Test 2

Small stool

Given:	Hardwood, sufficient material to complete the job.
Task:	Manufacture one stool frame as shown.
Machine used:	Breaking out machines, horizontal borer.
Instructions:	Dress material to size and cross-cut to length.
	Set boring machine to cut dowel holes on each end of rails.
	Holes to be centred width and thickness.
	Reset boring machine to bore inside faces of legs to give a flush fit with rail at the top and an equal scarcement at thickness.





Test 2 — Continued

Cutting list to be completed by candidate.

Name: _____ Class: _____ Date: _____

Cutting list — Test 2

Component	No.	Sawn Length	Sawn Width	Sawn Thickness	Finished Width	Finished Thickness	Comments/ Remarks

PASS/REFERRED

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Test 2 — Continued

Bedside cabinet (costing of timber)

Length	=	Lineal metres linm
Length x breadth	=	Square metres m^2
Length x breadth x thickness	=	Cubic metres m^3

Timber sold as:

- 100 linm (softwood)
- m^2 (board material, some softwood and hardwood)
- m^3 hardwood

Quantity	Description	Length	Breadth	Thickness	Cost Lin. m^2/m^3	Unit cost
					Total	
					VAT	
					Final cost	

Test 2 — Continued

Photographic evidence at completion of assessment			
Date	Time	Location	Comments

Adhere photograph here

Authentication			
Candidate	Assessor	Date	Time
Candidate feedback			

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Task 8

Step ladders

Power tools: The lecturer should demonstrate and work the full range of modern portable power tools.

These tools to include drills, circular saws, screwdrivers, sanders, jigsaws, planers and routers.

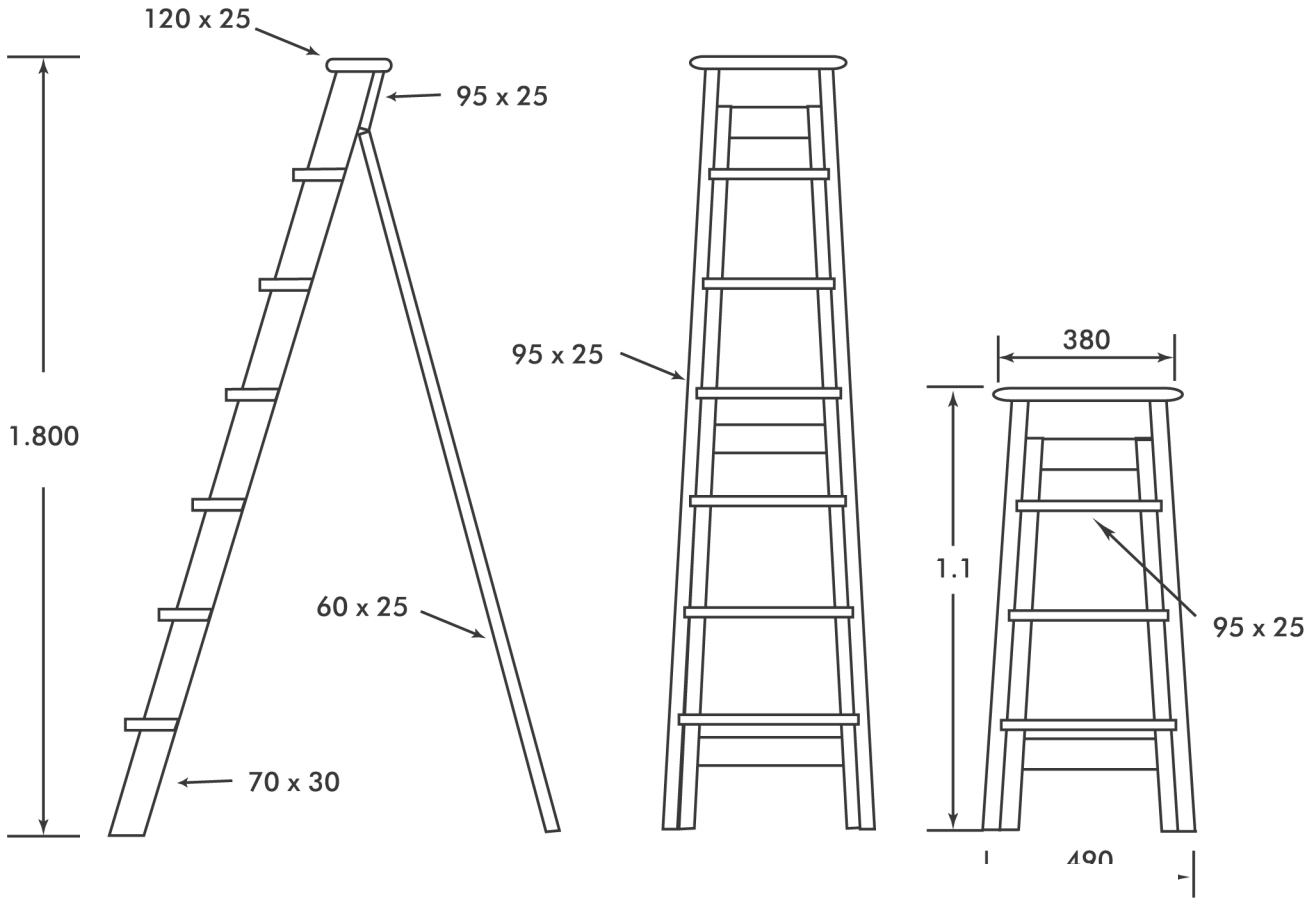
Task: The main practical exercise for power tools is to make a pair of steps.

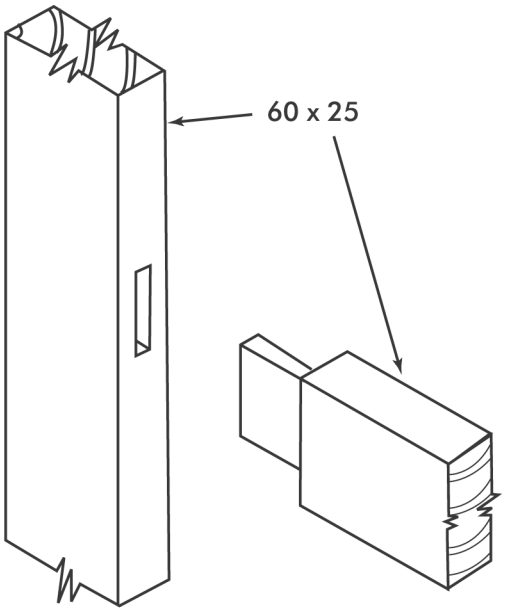
The candidate will machine all their own timber for the steps.

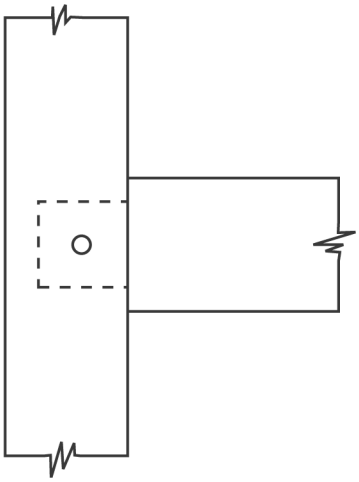
When making the steps, they will use most power tools.

Jigs etc. to be used with the power tools, ie router in treads.

Task 8 — Continued







This is a working sketch and is not a scale drawing

Task 8 — Continued

Cutting list to be completed by candidate.

Name: _____ Class: _____ Date: _____

Cutting list — Task 8

Component	No.	Sawn Length	Sawn Width	Sawn Thickness	Finished Width	Finished Thickness	Comments/ Remarks

PASS/REFERRED

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

Task 8 — Continued

Bedside cabinet (costing of timber)

Length = Lineal metres linm
Length x breadth = Square metres m^2
Length x breadth x thickness = Cubic metres m^3

Timber sold as:
- 100 linm (softwood)
- m^2 (board material, some softwood and hardwood)
- m^3 hardwood

Quantity	Description	Length	Breadth	Thickness	Cost Lin. m^2/m^3	Unit cost
					Total	
					VAT	
					Final cost	

Task 8 — Continued

Feedback to candidates

Candidate's signature: _____ Date: _____

Assessor's signature: _____ Date: _____

Internal verifier's signature: _____ Date: _____

5. PRODUCE BORED TIMBER AND TIMBER-BASED PRODUCTS

Element 2. Modify materials to form bored timber and timber-based products

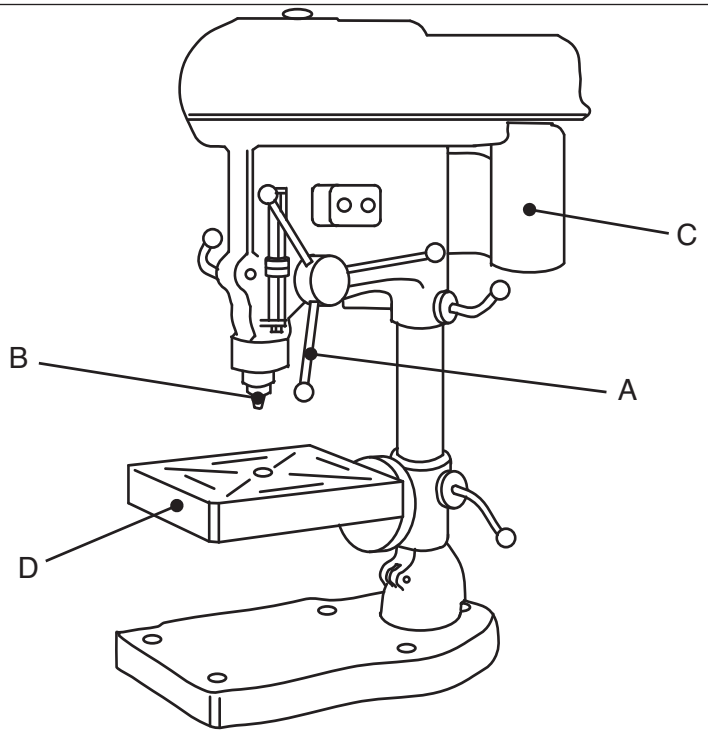
Task 9

Name the machine, machine parts and machine function

Worksheet 1

Q1a. The machine below is known as a hollow

_____



Q1b. The function of the machine is

_____

_____

Q1c. Against the following letters place the correct name for the part shown in the diagram.

A. _____ C. _____

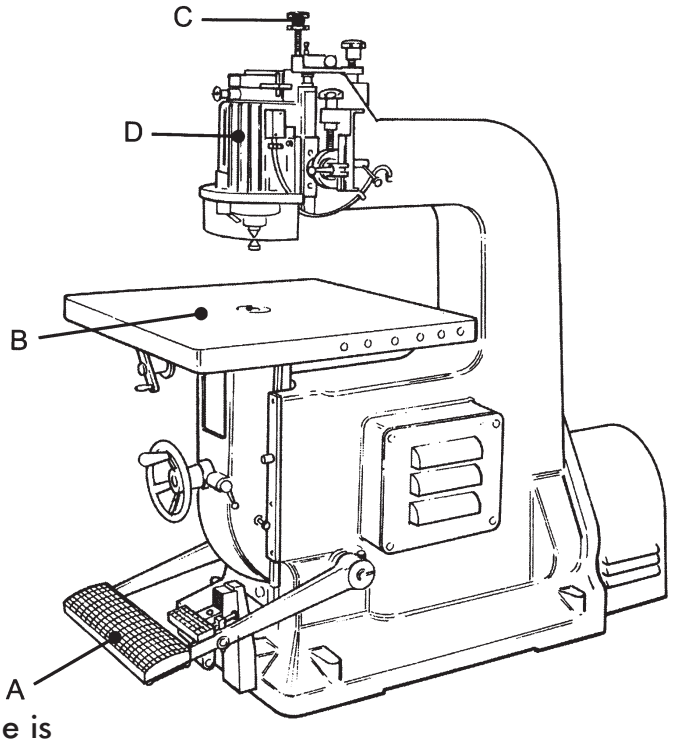
B. _____ D. _____

Task 9 — Continued

Worksheet 2

Q2a. The machine shown below is known as a hollow

_____



Q2b. The function of the machine is

_____

_____

Q2c. Against the following letters place the correct name for the part shown in the diagram.

A. _____ C. _____ Stop

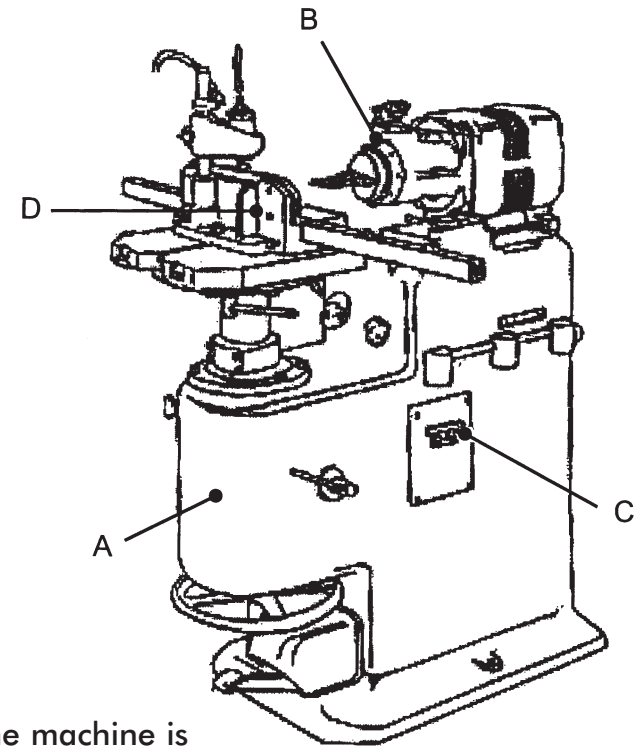
B. _____ D. _____

Task 9 — Continued

Worksheet 3

Q3a. The machine below is known as a hollow

_____



Q3b. The function of the machine is

_____

_____

Q3c. Against the following letters place the correct name for the part shown in the diagram.

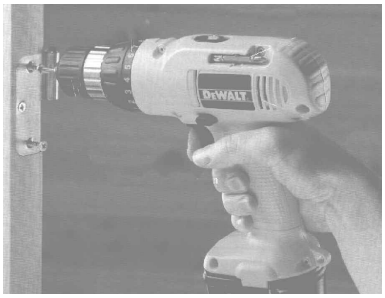
A. _____ C. _____

B. _____ D. _____

TASK 9 — Continued

Worksheet 4

Q4a. The power tool below is known as a



Q4b. The function of the tool is

Q4c. The power tool below in is known as a

Q4d. The function of the power tool is

TASK 9 — Continued

Worksheet 4 — Continued

Q4e. The power tool shown below is known as a

Q4f. The function of the tool is

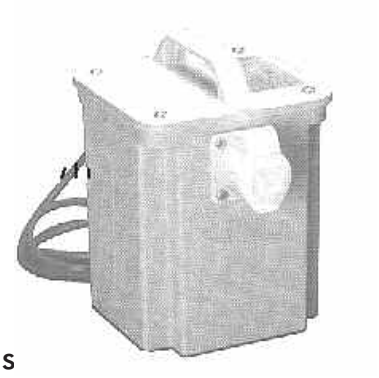
Q4g. The power tool below is known as a

Q4h. The function of the power tool is

TASK 9 — Continued

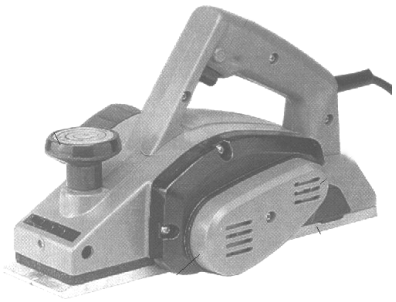
Worksheet 4 — Continued

Q4i. The power tool shown below is known as a



Q4j. The function of the tool is

Q4k. The power tool below is known as a



Q4l. The function of the power tool is

KNOWLEDGE EVIDENCE

Paper A

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. If a drawing has a scale of 1:20, what would the actual length of a component be if it was 10mm long on the drawing? (All workings to be shown.)

A 100mm

B 150mm

C 200mm

D 250mm

Q2. When running a straight profiles high-speed router, what would you use to achieve an even finish, safely?

A Side pressure

B Push sticks

C Top pressure

D All of the above

Q3. How many components of 200 x 200mm would you get from a sheet of M.D.F. 1220 x 2440mm, allowing 3mm per cut? (All workings to be shown.)

A 72

B 80

C 75

D 70

Q4. P.U.W.E.R comes under the umbrella of which statute legislation?

A The safety and Health Regulations 1974

B The Health and Safety at Work Act 1974

C The Health Safety at Work Regulations 1974

D The Safety and Health at Work Act 1974

KNOWLEDGE EVIDENCE

Paper A — Continued

Q5. A high-speed router runs at very fast speeds. How would you determine what type of lubricant you would use in the spindle bearings

A Refer to manufacturer's recommendations

B Multigrade engine oil

C Silicone spray

D Grease

Q6. If a load of H.D.F. is delivered swollen at the edges and warped, what would the prodadle cause be?

A They have been stacked incorrectly

B They have been stored close to a source of heat

C They have had direct contact with moisture

D They have been damaged by the forklift

Q7. A high-speed steel profile cutter is best suited for moulding soft wood. Is this statement true or false?

A True

B False

Q8. When edge moulding M.D.F. on the high-speed router, which type of cutter would you select if the material was a stock item, and the job was repeated frequently?

A High speed steel

B Tungston carbide tipped

C Polycrystaline diamond

D Carbon steel

Q9. A pedestal drill has a variable speed due to:

A frequency changer

B stepped pulleys

C gears

D integral drive

Paper A — Continued

Q10. The sawing of logs into commercial sized pieces is called:

A formation

B derivation

C conversion

D trimming

Q11. Directly below the cutter head on the high-speed router provision is made for removal of part of the table. Why is this?

A To allow the cutter to project below the surface of the table

B To clear away the dust from the former pin

C To allow easy access to the former pin

D To allow sharpening of the cutter

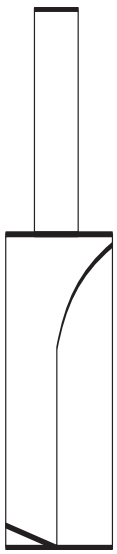
Q12. The cutter below is a:

A profile cutter

B circular cutter

C spoon cutter

D panel cutter



KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Paper A

Element 2. Modify materials to form planed timber and timber-based products

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. Why do routers operate at a higher number of revs/per/sec. in comparison with other woodworking machinery?

A To increase the feed speed

B To accommodate the small cutting circle

C To remove greater quantities of material

D To improve accuracy of cut

Q2. The high spindle speed is obtained on the router by:

A use of gears

B use of vee belts

C use of flat belts

D use of a frequency changer

Q3. When drilling metal on a pedestal drill, the rotation of the drill bit in relation to drilling most timbers, should be:

A slower

B faster

C the same

D depends how sharp the drill is

Q4. When using a three-bit cluster head on a single-head horizontal boring machine, which way would the drills rotate?

A

B

C

D

KNOWLEDGE EVIDENCE

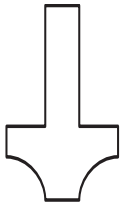
Paper A — Continued

Q5. What is the correct angle for a twist drill to be ground?

A 114°
B 116°
C 118°
D 120°

Q6. What type of cutter is shown in the diagram below?

A Panel cutter
B Profile cutter
C Spoon cutter
D Eccentric chuck



Q7. What type of drill bit is shown below?

A Lip and spur
B Jennings pattern
C Twist bit
D Solid centre

Q8. What part of the jig used on a high-speed router runs against the former pin?

A Vaccum stops
B Location.
C Pattern/template
D Runner

Q9. What is meant by the term 'eccentric', when relating to an eccentric chuck for the high-speed router?

A The cutter runs off centre
B The cutter runs slow
C The cutter runs centre and true
D The cutter runs at fast speeds

Paper A — Continued

Q10. Which type of bit would be most suitable to bore end grain using a single-head horizontal borer?

A Twist bit

B Lip and spur

C Fostner bit

D Profile bit

Q11. When maintaining a a single-head horizontal boring machine, where would you look to find out what type of grease would be used?

A Manufacture's schedule

B The operator

C The supervisor

D The Health and Safety Executive

Q12. When working with hardwoods on a router or boring machine, the M.E.L. is 5mg/m^2. What does M.E.L stand for?

A Minimum entry limit

B Minimum exposure limit

C Maximum exposure limit

D Maximum exit limit

KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 2. Modify materials to form planed timber and timber-based products

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Paper A

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 6 correct out of 8.

Q1. The extended use of hand-held powered tools may cause:

A dermatitis

B asbestosis

C dizziness

D vibration white finger

Q2. Who is responsible for making sure that PPE is supplied?

A The main contractor

B The employer

C The site manager

D The employee

Q3. When filling a machine with diesel which two of the following precautions should be taken?

A Switch off the engine

B Put on safety boots

C Don't smoke

D Start the engine up

Q4. When a load has to be lifted manually, what is the employer required to do by law?

A Pay the employee extra money

B Assess the risk of the task

C Record the lift in the safety book

D Assess the time the lift will take

KNOWLEDGE EVIDENCE

Paper A — Continued

Q5. Which of the following is the best way to lift a load manually?

A Keep legs straight, bend back and use the power of your legs

B Bend the knees, keep a straight back and use the power of your back

C Bend the knees, keep a straight back and use the power of your legs

D Bend the back, keep legs straight and use the power of your back

Q6. Which one of the following statements is true?

A There are various types of fire extinguishers for use on different types of fires

B There is only one type of fire extinguisher allowed on a building site

C Fire extinguishers are not allowed to be used on building sites

D Fire extinguishers can only be used by an experienced fire fighter

Q7. What is the first action you should take if you discover a fire?

A Try and put it out

B Look for the supervisor

C Phone the fire brigade

D Raise the alarm

Q8. Why must you report an accident on the site?

A It is a legal requirement

B To find out who was to blame for it

C To find out if any damage was caused

D To make sure the site safety officer gets to know

KNOWLEDGE EVIDENCE

Paper A — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 6 correct out of 8.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Paper A — Model Answers

Element 1

1	C
2	D
3	A
4	B
5	A
6	C
7	A
8	C
9	B
10	C
11	A
12	D

Element 2

1	B
2	D
3	A
4	A
5	C
6	B
7	C
8	C
9	A
10	B
11	A
12	C

Element 3

1	D
2	B
3	A and C
4	B
5	C
6	A
7	D
8	A

Paper B

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. A pedestal drill has a variable speed due to:

A frequency changer

B integral drive

C gears

D stepped pulleys

Q2. When edge moulding MDF on the high-speed router, which type of cutter would you select if the material was a stock item, and the job was repeated frequently?

A Polycrystaline diamond

B Tungsten carbide tipped

C High speed steel

D Carbon steel

Q3. Directly below the cutterhead on the high speed router, provision is made for removal of part of the table. Why is this?

A To clear away the dust from the former pin

B To allow easy access to the former pin

C To allow the cutter to project below the surface of the table

D To allow sharpening of the cutter

Q4. If a drawing has a scale of 1:20, what would the actual length of a component be if it was 10mm long on the drawing? (All workings to be shown.)

A 200mm

B 100mm

C 150mm

D 250mm

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. How many components of 200 x 200mm would you get from a sheet of MDF 1220 x 2440mm, allowing 3mm per cut? (All workings to be shown.)

A. 80
B. 75
C. 72
D. 70

Q6. If a load of HDF is delivered swollen at the edges and warped, what would the prodadle cause be?

A. They have been stacked incorrectly
B. They have had direct contact with moisture
C. They have been damaged by the forklift
D. They have been stored close to a source of heat

Q7. The sawing of logs into commercial sized pieces is called:

A. formation
B. conversion
C. derivation
D. rimming

Q8. When running a straight profiles high-speed router, what would you use to safely achieve an even finish?

A. Side pressure
B. Push sticks
C. Top pressure
D. All of the above

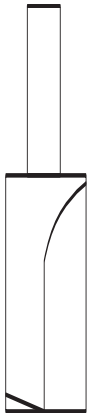
Q9. A high-speed steel profile cutter is best suited for moulding soft wood. Is this true or false?

A. False
B. True

Paper B — Continued

Q10. The cutter shown here is a:

A. Profile cutter
B. Spoon cutter
C. Panel cutter
D. Circular cutter



Q11. P.U.W.E.R. comes under the umbrella of which statute legislation?

A. The Safety and Health Regulations 1974
B. The Safety and Health at Work Act 1974
C. The Health Safety at Work Regulations 1974
D. The Health and Safety at Work Act 1974

Q12. A high-speed router runs at very fast speeds. How would you determine what type of lubricant you would use in the spindle bearings?

A. Use multigrade engine oil
B. Refer to the manufacturer's recommendations
C. Use silicone spray
D. Use grease

KNOWLEDGE EVIDENCE

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 1. Prepare, set up and establish suitability of machinery and materials

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Element 1 — Workings

Paper B

Element 2. Modify materials to form bored timber and timber-based products

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 9 correct out of 12.

Q1. What is meant by the term 'eccentric', when relating to an 'eccentric chuck' for a high-speed router?

A The cutter runs at fast speeds

B The cutter runs slow

C The cutter runs centre and true

D The cutter runs off centre

Q2. Which type of bit would be most suitable to bore end grain when using a single-head horizontal borer?

A Lip and spur bit

B Twist bit

C Fostner bit

D Profile bit

Q3. What type of drill bit is shown below?

A Lip and spur

B Twist bit

C Jennings pattern

D Solid centre

Q4. High spindle speed is obtained on a router by the use of:

A a frequency changer

B gears

C vee belts

D flat belts

KNOWLEDGE EVIDENCE

Paper B — Continued

Q5. When maintaining a single-head horizontal boring machine, where would you look to find out what type of grease should be used?

A The supervisor

B The operator

C The manufacture's schedule

D The Health and Safety Executive

Q6. When drilling metal on a pedestal drill, the rotation of the drill bit in relation to drilling most timbers should be:

A faster

B slower

C the same

D depends how sharp the drill is

Q7. When working with hardwoods on a router or boring machine, the M.E.L. is 5mg/m^3. What does M.E.L stand for?

A Minimum entry limit

B Minimum exposure limit

C Maximum exit limit

D Maximum exposure limit

Q8. What is the correct angle for a twist drill to be ground?

A 116°

B 118°

C 120°

D 114°

Paper B — Continued

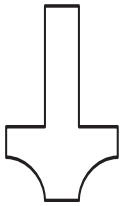
Q9. What type of cutter is shown in the diagram below?

A Panel cutter

B Spoon cutter

C Profile cutter

D Eccentric chuck



Q10. What part of the jig used on a high-speed router runs against the former pin?

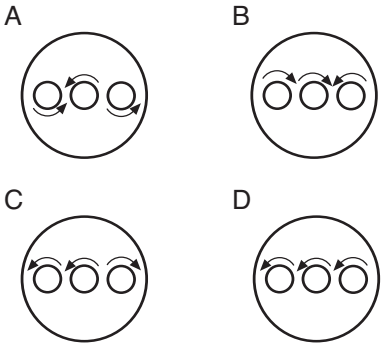
A Pattern/template

B Vacuum stops

C Location

D Runner

Q11. When using a three-bit cluster head on a single-head horizontal boring machine, which way would the drills rotate?



Q12. Why do routers operate at a higher number of revs/per/sec. in comparison with other woodworking machinery?

A To increase the feed speed

B To improve the accuracy of cut

C To remove greater quantities of material

D To accommodate the small cutting circle

KNOWLEDGE EVIDENCE

Paper B — Answer Sheet

Name: _____ Class: _____ Date: _____

Element 2. Modify materials to form bored timber and timber-based products

Candidate's instructions: Attempt all questions. Please tick box with your answer.

Minimum pass mark: 9 correct out of 12.

Q1. ☐ A ☐ B ☐ C ☐ D

Q2. ☐ A ☐ B ☐ C ☐ D

Q3. ☐ A ☐ B ☐ C ☐ D

Q4. ☐ A ☐ B ☐ C ☐ D

Q5. ☐ A ☐ B ☐ C ☐ D

Q6. ☐ A ☐ B ☐ C ☐ D

Q7. ☐ A ☐ B ☐ C ☐ D

Q8. ☐ A ☐ B ☐ C ☐ D

Q9. ☐ A ☐ B ☐ C ☐ D

Q10. ☐ A ☐ B ☐ C ☐ D

Q11. ☐ A ☐ B ☐ C ☐ D

Q12. ☐ A ☐ B ☐ C ☐ D

Candidate's signature: _____ Date: _____

PASS/REFERRED

Lecturer's signature / initials: _____ Date: _____

KNOWLEDGE EVIDENCE

Paper B

Element 3. Contribute to the provision of a safe work environment

Candidate's instructions: Attempt all questions.

Please tick box with your answer on the answer sheet provided.

Minimum pass mark: 6 correct out of 8.

Q1. Which one of the following statements is true?

A There is only one type of fire extinguisher allowed on a building site

B Fire extinguishers are not allowed to be used on building sites

C There are various types of fire extinguishers for use on different types of fires

D Fire extinguishers can only be used by an experienced firefighter

Q2. Which of the following is the best way to lift a load manually?

A Bend the knees, keep a straight back and use the power of your legs

B Bend the knees, keep a straight back and use the power of your back

C Bend the back, keep legs straight and use the power of your back

D Keep legs straight, bend back and use the power of your legs

Q3. What is the first action you should take if you discover a fire?

A Try and put it out

B Look for the supervisor

C Raise the alarm

D Phone the fire brigade

Q4. When filling a machine with diesel which two of the following precautions should be taken?

A Start the engine up

B Switch off the engine

C Put on safety boots

D Don't smoke

KNOWLEDGE EVIDENCE

Paper B

Q5. Why must you report an accident on the site?

A To find out if any damage was caused

B It is a legal requirement

C To find out who was to blame for it

D To make sure the site safety officer gets to know

Q6. The extended use of hand-held powered tools may cause:

A Vibration white finger

B Asbestosis

C Dizziness

D Dermatitis

Q7. When a load has to be lifted manually, what is the employer required to do by law?

A Pay the employee extra money

B Record the lift in the safety book

C Assess the time the lift will take

D Assess the risk of the task

Q8. Who is responsible for making sure that PPE is supplied?

A The employer

B The employee

C The site manager

D The main contractor

KNOWLEDGE EVIDENCE

Paper B — Model Answers

Element 1

1	D
2	A
3	C
4	A
5	C
6	D
7	B
8	D
9	B
10	C
11	D
12	B

Element 2

1	D
2	A
3	B
4	A
5	C
6	B
7	D
8	B
9	C
10	A
11	A
12	D

Element 3

1	C
2	A
3	C
4	B and D
5	B
6	A
7	D
8	A